

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	((finite adj mixture) or bacon) same (statistic\$5 and outlier)	US-PGPUB	OR	ON	2005/10/07 15:49
L3	4	unsupervised same (fraud adj detection)	US-PGPUB	OR	ON	2005/10/07 17:19
L4	103	702/181.ccls.	US-PGPUB	OR	ON	2005/10/07 17:19
L5	27	702/176.ccls.	US-PGPUB	OR	ON	2005/10/07 17:49
L6	34	706/14.ccls.	US-PGPUB	OR	ON	2005/10/07 17:50
L7	551	703/2.ccls.	US-PGPUB	OR	ON	2005/10/07 17:50
S1	524	(weight or weighting) and (mean and variance) and outlier	US-PGPUB	OR	ON	2005/10/07 15:49
S2	776	statistic\$5 same outlier	US-PGPUB	OR	ON	2005/10/07 13:57
S3	1207	fraud with detect\$4	US-PGPUB	OR	ON	2005/10/06 15:11
S4	3253	abnormal with value	US-PGPUB	OR	ON	2005/10/06 15:11
S5	4006	S2 or S4	US-PGPUB	OR	ON	2005/10/06 15:12
S6	13	S5 and S3	US-PGPUB	OR	ON	2005/10/06 15:12
S7	894	(multi with dimension\$5) and (time with series)	US-PGPUB	OR	ON	2005/10/06 15:13
S8	15	S7 and S3	US-PGPUB	OR	ON	2005/10/06 15:13
S9	28	S6 or S8	US-PGPUB	OR	ON	2005/10/06 15:50
S10	32	(YAMANISHI-KENJI TAKEUCHI-JUN TAKEUCHI-JUNICHI TAKEUCHI-JUNJI TAKEUCHI-JUN-ICHI).in.	US-PGPUB	OR	ON	2005/10/06 16:05
S11	8	S10 and (outlier or abnormal)	US-PGPUB	OR	ON	2005/10/06 15:52
S12	0	"6466894".pn.	US-PGPUB	OR	ON	2005/10/06 16:07
S13	2	"09099405"	US-PGPUB	OR	ON	2005/10/06 16:07
S14	26	(statistical\$4 adj (anomoly or anomaly) adj detect\$5)	US-PGPUB	OR	ON	2005/10/07 13:58

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [About Us](#)

Welcome United States Patent and Trademark Office

**Search Results**[BROWSE](#)[SEARCH](#)[IEEE XPLOR GUIDE](#) [e-mail](#)

Results for "( credit card fraud detection&lt;in&gt;de)"

Your search matched 7 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.**» Search Options**[View Session History](#)**Modify Search**[New Search](#)( credit card fraud detection<in>de) [»](#) Check to search only within this results set**Display Format:** Citation Citation & Abstract**» Key**[Select](#)    [Article Information](#)**IEEE JNL** IEEE Journal or Magazine**IEE JNL** IEE Journal or Magazine**IEEE CNF** IEEE Conference Proceeding**IEE CNF** IEE Conference Proceeding**IEEE STD** IEEE Standard**1. Distributed data mining in credit card fraud detection**

Chan, P.K.; Fan, W.; Prodromidis, A.L.; Stolfo, S.J.;

Intelligent Systems and Their Applications, IEEE [see also IEEE Intelligent Systems]

Volume 14, Issue 6, Nov.-Dec. 1999 Page(s):67 - 74

Digital Object Identifier 10.1109/5254.809570

[AbstractPlus](#) | [References](#) | [Full Text: PDF\(736 KB\)](#) IEEE JNL**2. Survey of fraud detection techniques**

Yufeng Kou; Chang-Tien Lu; Sirwongwattana, S.; Yo-Ping Huang;

Networking, Sensing and Control, 2004 IEEE International Conference on  
Volume 2, 2004 Page(s):749 - 754 Vol.2

Digital Object Identifier 10.1109/ICNSC.2004.1297040

[AbstractPlus](#) | [Full Text: PDF\(1599 KB\)](#) IEEE CNF**3. A Web services-based collaborative scheme for credit card fraud detection**

Chuang-Cheng Chiu; Chieh-Yuan Tsai;

e-Technology, e-Commerce and e-Service, 2004. EEE '04. 2004 IEEE International Conference on  
28-31 March 2004 Page(s):177 - 181

Digital Object Identifier 10.1109/EEE.2004.1287306

[AbstractPlus](#) | [Full Text: PDF\(229 KB\)](#) IEEE CNF**4. Parallel granular neural networks for fast credit card fraud detection**

Syeda, M.; Yan-Qing Zhang; Yi Pan;

Fuzzy Systems, 2002. FUZZ-IEEE'02. Proceedings of the 2002 IEEE International Conference on  
Volume 1, 12-17 May 2002 Page(s):572 - 577

Digital Object Identifier 10.1109/FUZZ.2002.1005055

[AbstractPlus](#) | [Full Text: PDF\(467 KB\)](#) IEEE CNF**5. Neural data mining for credit card fraud detection**

Brause, R.; Langsdorf, T.; Hepp, M.;

Tools with Artificial Intelligence, 1999. Proceedings. 11th IEEE International Conference on  
9-11 Nov. 1999 Page(s):103 - 106

Digital Object Identifier 10.1109/TAI.1999.809773

[AbstractPlus](#) | [Full Text: PDF\(56 KB\)](#) IEEE CNF**6.**CARDWATCH: a neural network based database mining system for credit card fraud detection  
Aleskerov, E.; Freisleben, B.; Rao, B.;

Computational Intelligence for Financial Engineering (CIFEr), 1997., Proceedings of the IEEE/IAFE  
24-25 March 1997 Page(s):220 - 226  
Digital Object Identifier 10.1109/CIFER.1997.618940  
[AbstractPlus](#) | Full Text: [PDF](#)(944 KB) IEEE CNF



7. Credit card fraud detection with a neural-network

Ghosh, S.; Reilly, D.L.;  
System Sciences, 1994. Vol.III: Information Systems: Decision Support and Knowledge-Based Sys  
the Twenty-Seventh Hawaii International Conference on  
Volume 3, 4-7 Jan. 1994 Page(s):621 - 630  
Digital Object Identifier 10.1109/HICSS.1994.323314

[AbstractPlus](#) | Full Text: [PDF](#)(696 KB) IEEE CNF



[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IE

Indexed by  
 Inspec®

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [About Us](#)

Welcome United States Patent and Trademark Office

[Search Results](#)[BROWSE](#)[SEARCH](#)[IEEE XPLORE GUIDE](#)

Results for "(fraud detection&lt;and&gt;anomaly detection)&lt;and&gt;outlier detection"

[e-mail](#)

Your search matched 2 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.[» Search Options](#)[View Session History](#)[Modify Search](#)[New Search](#)

(fraud detection&lt;and&gt;anomaly detection)&lt;and&gt;outlier detection

[»](#) Check to search only within this results set[» Key](#)Display Format:  Citation  Citation & Abstract

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

Select Article Information

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

1. Exploiting efficient data mining techniques to enhance intrusion detection systems  
Chang-Tien Lu; Boedihardjo, A.P.; Manalwar, P.;  
Information Reuse and Integration, Conf, 2005. IRI -2005 IEEE International Conference on.  
Aug. 15-17, 2005 Page(s):512 - 517  
[AbstractPlus](#) | Full Text: [PDF\(131 KB\)](#) IEEE CNF

2. Survey of fraud detection techniques  
Yufeng Kou; Chang-Tien Lu; Sirwongwattana, S.; Yo-Ping Huang;  
Networking, Sensing and Control, 2004 IEEE International Conference on  
Volume 2, 2004 Page(s):749 - 754 Vol.2  
Digital Object Identifier 10.1109/ICNSC.2004.1297040  
[AbstractPlus](#) | Full Text: [PDF\(1599 KB\)](#) IEEE CNF

[\[View All Results\]](#)[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IEEE

Indexed by  
**Inspec**

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [Affiliate](#)

Welcome United States Patent and Trademark Office

[Search Results](#)[BROWSE](#)[SEARCH](#)[IEEE XPLORE GUIDE](#) [e-mail](#)

Results for "( fraud detection techniques&lt;in&gt;de)"

Your search matched 1 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.» **Search Options**[View Session History](#)[Modify Search](#)[New Search](#)[»](#) Check to search only within this results set» **Key**Display Format:  Citation  Citation & Abstract

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

**1. Survey of fraud detection techniques**

Yufeng Kou; Chang-Tien Lu; Sirwongwattana, S.; Yo-Ping Huang;  
Networking, Sensing and Control, 2004 IEEE International Conference on  
Volume 2, 2004 Page(s):749 - 754 Vol.2  
Digital Object Identifier 10.1109/ICNSC.2004.1297040

[AbstractPlus](#) | Full Text: [PDF\(1599 KB\)](#) IEEE CNF[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IEEE

Indexed by  
**Inspec**

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [Aler](#)

Welcome United States Patent and Trademark Office

[Search Results](#)[BROWSE](#)[SEARCH](#)[IEEE XPLOR GUIDE](#)

Results for "( fraud detection techniques&lt;in&gt;de)"

Your search matched 1 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.» **Search Options**[View Session History](#)[Modify Search](#)[New Search](#)

( fraud detection techniques&lt;in&gt;de)

 Check to search only within this results set» **Key**Display Format:  Citation  Citation & Abstract

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

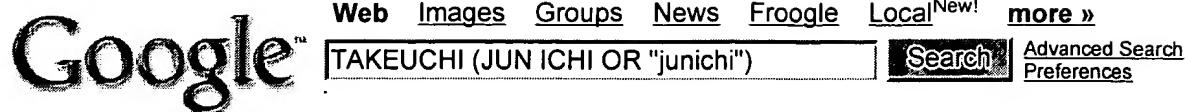
**1. Survey of fraud detection techniques**

Yufeng Kou; Chang-Tien Lu; Sirwongwattana, S.; Yo-Ping Huang;  
Networking, Sensing and Control, 2004 IEEE International Conference on  
Volume 2, 2004 Page(s):749 - 754 Vol.2  
Digital Object Identifier 10.1109/ICNSC.2004.1297040

[AbstractPlus](#) | Full Text: [PDF\(1599 KB\)](#) IEEE CNF[Help](#) [Contact Us](#) [Privac](#)

© Copyright 2005 IE

Indexed by  
**Inspec**

**Web**

Results 1 - 10 of about 106,000 for **TAKEUCHI (JUN ICHI OR "junichi")**. (0.23 seconds)

**Thoughts About Richard Milgrim, by Takeuchi Jun'ichi, Director ...**

Message from **Takeuchi Jun'ichi** Director, Tokyo University of Fine Arts Museum  
Formerly the Chief Curator at the Gotoh Museum Written in 1998 ...

[www.teaceramics.com/html/thoughts-takeuchi-junichi.html](http://www.teaceramics.com/html/thoughts-takeuchi-junichi.html) - 31k - [Cached](#) - [Similar pages](#)

**DBLP: Jun-ichi Takeuchi**

**Jun-ichi Takeuchi**. List of publications from the DBLP Bibliography Server - FAQ  
... 2, **Jun-ichi Takeuchi**: Some Improved Sample Complexity Bounds in the ...  
[www.informatik.uni-trier.de/~ley/db/indices/a-tree/t/Takeuchi:Jun=ichi.html](http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/t/Takeuchi:Jun=ichi.html) - 10k - Oct 5, 2005 -  
[Cached](#) - [Similar pages](#)

**Jun-ichi Takeuchi, Dr.Eng. Principal Researcher in Data Mining ...**

**Jun-ichi Takeuchi**, Dr.Eng. Principal Researcher in Data Mining Research Group  
Internet Systems Research Laboratories, NEC Corporation ...  
[www.labs.nec.co.jp/DTmining/members/takeuchi/index\\_e.html](http://www.labs.nec.co.jp/DTmining/members/takeuchi/index_e.html) - 2k - [Cached](#) - [Similar pages](#)

**Jun'ichi Takeuchi's Publication List**

**Jun'ichi Takeuchi's Publication List**. Refereed Journal Papers. J. **Takeuchi** & K. Yamanishi: ``A Unifying Framework for Detecting Outliers and Change Points ...  
[www.labs.nec.co.jp/DTmining/members/takeuchi/pl.html](http://www.labs.nec.co.jp/DTmining/members/takeuchi/pl.html) - 11k - [Cached](#) - [Similar pages](#)

**On-line unsupervised outlier detection using finite mixtures with ...**

Kenji Yamanishi , **Jun-ichi Takeuchi**, A unifying framework for detecting outliers and change points from non-stationary time series data, Proceedings of the ...  
[portal.acm.org/citation.cfm?id=347160](http://portal.acm.org/citation.cfm?id=347160) - [Similar pages](#)

**Discovering outlier filtering rules from unlabeled data**

**Jun-ichi Takeuchi**, NEC Corporation, 4-1-1,Miyazaki,Miyamae, ... Kenji Yamanishi ,  
**Jun-ichi Takeuchi**, A unifying framework for detecting outliers and change ...  
[portal.acm.org/citation.cfm?id=502570](http://portal.acm.org/citation.cfm?id=502570) - [Similar pages](#)  
[ More results from portal.acm.org ]

**jun ichi takeuchi - ResearchIndex document query**

**jun ichi takeuchi** - scientific articles matching the query: **jun ichi takeuchi**.  
[citeseer.ist.psu.edu/cis?q=Jun-ichi+Takeuchi](http://citeseer.ist.psu.edu/cis?q=Jun-ichi+Takeuchi) - 10k - [Cached](#) - [Similar pages](#)

**IBM Research - Naoki Abe**

Atsuyoshi Nakamura, **Jun-ichi Takeuchi** and Naoki Abe; Efficient Distribution-free Population Learning ... Atsuyoshi Nakamura, Naoki Abe and **Junichi Takeuchi** ...  
[www.research.ibm.com/people/n/nabe/publications.html](http://www.research.ibm.com/people/n/nabe/publications.html) - 27k - [Cached](#) - [Similar pages](#)

**Publications**

**Jun-ichi Maskawa**, Toshiki **Takeuchi**, Kazuo Maki, Kaoru Tsujii and Toyoichi Tanaka, ... Masukawa; **Junichi**, Isshiki; Nobuyuki, Ohji; Nobunori, Chin; ...  
[jm.heisei-u.ac.jp/~maskawa/xml/publications.html](http://jm.heisei-u.ac.jp/~maskawa/xml/publications.html) - 8k - [Cached](#) - [Similar pages](#)

**Takeuchi, Junichi**

**Takeuchi, Junichi**. UCLA MAE Dept. 43-133, Engineering IV, 420 Westwood Plaza

Mailcode 159710 Los Angeles, CA 90095-1597 Lab Phone: 310-825-8824 E-mail: ...  
[www.fusion.ucla.edu/staff/Takeuchi.html](http://www.fusion.ucla.edu/staff/Takeuchi.html) - 1k - [Cached](#) - [Similar pages](#)

Gooooooooogle ►

Result Page:    [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)    [Next](#)



Google Desktop Search

9:30 AM

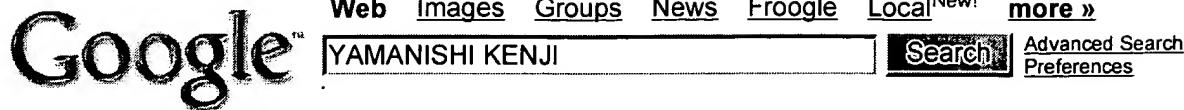
Free! Instantly find your email, files, media and web history. [Download now.](#)

[TAKEUCHI \(JUN ICHI OR "junichi"\)](#) [Search](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google

**Web**Results 1 - 10 of about 15,200 for **YAMANISHI KENJI**. (0.21 seconds)**DBLP: Kenji Yamanishi**

23, EE, Kenji Yamanishi: Extended Stochastic Complexity and Minimax Relative ...

21, Kenji Yamanishi: Distributed Cooperative Bayesian Learning Strategies. ...

www.informatik.uni-trier.de/~ley/db/indices/a-tree/y/Yamanishi:Kenji.html - 18k - Oct 5, 2005 -

[Cached](#) - [Similar pages](#)**DBLP: Kenji Tateishi**

1, EE · Satoshi Morinaga, Kenji Yamanishi, Kenji Tateishi, Toshikazu Fukushima:

Mining product ... 5, Satoshi Morinaga, [1]. 6, Kenji Yamanishi, [1] ...

www.informatik.uni-trier.de/~ley/db/indices/a-tree/t/Tateishi:Kenji.html - 4k - [Cached](#) - [Similar pages](#)[ [More results from www.informatik.uni-trier.de](#) ]**kenji yamanishi - ResearchIndex document query**

kenji yamanishi - scientific articles matching the query: kenji yamanishi.

citeseer.ist.psu.edu/cis?q=Kenji+Yamanishi - 16k - [Cached](#) - [Similar pages](#)**Kenji Yamanishi's resime**

Kenji Yamanishi. Last Updated: Jan. 2005. Japanese Version. Research Fellow.

Data Mining Research Group., Ineternet Systems Laboratories, NEC Corporation. ...

www.labs.nec.co.jp/DTmining/members/yamanishi/index\_e.html - 170k - [Cached](#) - [Similar pages](#)**[PDF] List of JAERI Documents (updated 14/1/2004)**File Format: PDF/Adobe Acrobat - [View as HTML](#)

Toshihiko YAMANISHI, Kenji OKUNO. September 1996. 96-027. Evaluation of resolved resonance parameters of fission product nuclides with atomic numbers ...

www.nea.fr/html/databank/labreports/JAERI-Data-Code.pdf - [Similar pages](#)**Text classification using ESC-based stochastic decision lists**

32 Kenji Yamanishi, A Learning Criterion for Stochastic Rules, Machine Learning,

... Hang Li , Kenji Yamanishi, Topic analysis using a finite mixture model, ...

portal.acm.org/citation.cfm?id=638647 - [Similar pages](#)**A Learning Criterion for Stochastic Rules**

Kenji Yamanishi, On polynomial-time probably almost discriminative ...

Kenji Yamanishi, A randomized approximation of the MDL for stochastic models with ...

portal.acm.org/citation.cfm?id=147084 - [Similar pages](#)[ [More results from portal.acm.org](#) ]**Citebase - Document Classification Using a Finite Mixture Model**

@misc{li-1997-, author = {Hang Li and Kenji Yamanishi}, title = {Document

Classification Using a Finite Mixture Model}, ...

citebase.eprints.org/cgi-bin/ citations?id=oai:arXiv.org:cmp-lg/9705005 - 29k - [Cached](#) - [Similar pages](#)**Kenji Yamanishi**

Kenji Yamanishi. A loss bound model for on-line stochastic prediction algorithms.

... Kenji Yamanishi. Distributed cooperative Bayesian learning strategies. ...

theory.lcs.mit.edu/~iandc/Authors/yamanishikenji.html - 2k - [Cached](#) - [Similar pages](#)

John A

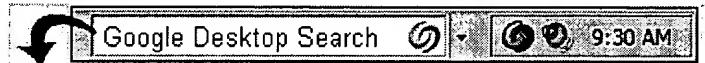
Hang Li and **Kenji Yamanishi** Document Classification Using a Finite Mixture Model

... Kenji Yamanishi and Hang Li. Mining Open Answers in Questionnaire Data ...

research.microsoft.com/users/ hangli/HP\_files/publication-list.htm - 44k - [Cached](#) - [Similar pages](#)

Gooooooooogle ►

Result Page:    [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)    [Next](#)

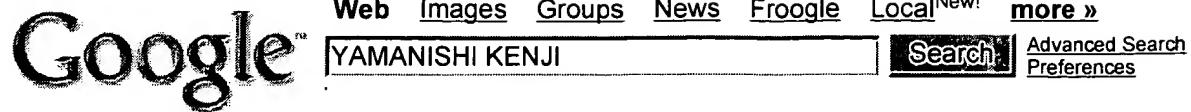


Free! Instantly find your email, files, media and web history. [Download now.](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google

**Web**Results 1 - 10 of about 15,200 for **YAMANISHI KENJI**. (0.21 seconds)**DBLP: Kenji Yamanishi**

23, EE, Kenji Yamanishi: Extended Stochastic Complexity and Minimax Relative ...

21, Kenji Yamanishi: Distributed Cooperative Bayesian Learning Strategies. ...

www.informatik.uni-trier.de/~ley/db/indices/a-tree/y/Yamanishi:Kenji.html - 18k - Oct 5, 2005 -

[Cached](#) - [Similar pages](#)**DBLP: Kenji Tateishi**

1, EE · Satoshi Morinaga, Kenji Yamanishi, Kenji Tateishi, Toshikazu Fukushima:

Mining product ... 5, Satoshi Morinaga, [1]. 6, Kenji Yamanishi, [1] ...

www.informatik.uni-trier.de/~ley/db/indices/a-tree/t/Tateishi:Kenji.html - 4k - [Cached](#) - [Similar pages](#)

[ More results from www.informatik.uni-trier.de ]

**kenji yamanishi - ResearchIndex document query**

kenji yamanishi - scientific articles matching the query: kenji yamanishi.

citeseer.ist.psu.edu/cis?q=Kenji+Yamanishi - 16k - [Cached](#) - [Similar pages](#)**Kenji Yamanishi's resime**

Kenji Yamanishi. Last Updated: Jan. 2005. Japanese Version. Research Fellow.

Data Mining Research Group., Ineternet Systems Laboratories, NEC Corporation. ...

www.labs.nec.co.jp/DTmining/members/yamanishi/index\_e.html - 170k - [Cached](#) - [Similar pages](#)**[PDF] List of JAERI Documents (updated 14/1/2004)**File Format: PDF/Adobe Acrobat - [View as HTML](#)

Toshihiko YAMANISHI, Kenji OKUNO. September 1996. 96-027. Evaluation of resolved resonance parameters of fission product nuclides with atomic numbers ...

www.nea.fr/html/databank/labreports/JAERI-Data-Code.pdf - [Similar pages](#)**Text classification using ESC-based stochastic decision lists**

32 Kenji Yamanishi, A Learning Criterion for Stochastic Rules, Machine Learning,

... Hang Li , Kenji Yamanishi, Topic analysis using a finite mixture model, ...

portal.acm.org/citation.cfm?id=638647 - [Similar pages](#)**A Learning Criterion for Stochastic Rules**

Kenji Yamanishi, On polynomial-time probably almost discriminative ...

Kenji Yamanishi, A randomized approximation of the MDL for stochastic models with ...

portal.acm.org/citation.cfm?id=147084 - [Similar pages](#)

[ More results from portal.acm.org ]

**Citebase - Document Classification Using a Finite Mixture Model**

@misc{li-1997-, author = {Hang Li and Kenji Yamanishi}, title = {Document

Classification Using a Finite Mixture Model}, ...

citebase.eprints.org/cgi-bin/ citations?id=oai:arXiv.org:cmp-lg/9705005 - 29k - [Cached](#) - [Similar pages](#)**Kenji Yamanishi**

Kenji Yamanishi. A loss bound model for on-line stochastic prediction algorithms.

... Kenji Yamanishi. Distributed cooperative Bayesian learning strategies. ...

theory.lcs.mit.edu/~iandc/Authors/yamanishikenji.html - 2k - [Cached](#) - [Similar pages](#)

John A

Hang Li and Kenji Yamanishi Document Classification Using a Finite Mixture Model

... Kenji Yamanishi and Hang Li. Mining Open Answers in Questionnaire Data ...

research.microsoft.com/users/ hangli/HP\_files/publication-list.htm - 44k - Cached - Similar pages

Gooooooooogle ►

Result Page:    1 2 3 4 5 6 7 8 9 10    [Next](#)

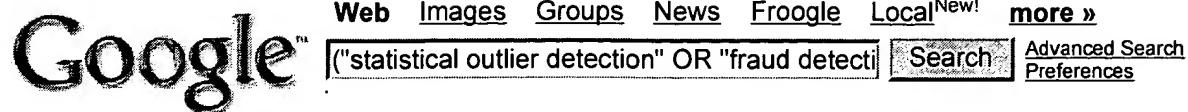


Free! Instantly find your email, files, media and web history. [Download now.](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google



## Web Results 1 - 10 of about 140 for ("statistical outlier detection" OR "fraud detection") "normal distribution" (weight OR we...)

### [PPT] [Slide 1](#)

File Format: Microsoft Powerpoint 97 - [View as HTML](#)  
 distribution parameter (eg, **mean**, **variance**). number of expected outliers. Drawbacks  
 ... Outlier detection and analysis are very useful for **fraud detection**, ...  
[www.cs.utsa.edu/~kwek/cs6463s05/clusterIII.ppt](http://www.cs.utsa.edu/~kwek/cs6463s05/clusterIII.ppt) - [Similar pages](#)

### [PS] [Incremental Quantile Estimation for Massive Tracking Fei ChenBell ...](#)

File Format: Adobe PostScript - [View as Text](#)  
 ... **weighting** can be used with stochastic approximation so that more **weight** is  
 ... 3.2.1 **Normal Distribution** With Drift A **normal distribution** with **variance** ...  
[cm.bell-labs.com/cm/ms/departments/sia/doc/KDD2000.ps](http://cm.bell-labs.com/cm/ms/departments/sia/doc/KDD2000.ps) - [Similar pages](#)

### [PDF] [Incremental Quantile Estimation for Massive Tracking](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 Exponential **weighting** is needed in both the quantile estimate and the ... A **normal distribution** with **variance** one and a **mean** of .006n at update n was used ...  
[cm.bell-labs.com/cm/ms/departments/sia/doc/kdd2000.pdf](http://cm.bell-labs.com/cm/ms/departments/sia/doc/kdd2000.pdf) - [Similar pages](#)

### [PPT] [www.cs.sfu.ca/~han/bk/8clst.ppt](#)

File Format: Microsoft Powerpoint 97 - [View as HTML](#)  
 The centroid is the center (**mean** point) of the cluster. ... Outlier detection and analysis are very useful for **fraud detection**, etc. and can be performed by ...  
[Similar pages](#)

### [PDF] [An Introduction to Machine Learning with Kernels](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 with **mean**  $\mu \in \mathbb{R}$ . and **variance**  $\sigma^2 \in \mathbb{R}$ . **Normal Distribution** in ... A small **weight** vector in "feature space", as commonly ...  
[users.rsise.anu.edu.au/~daa/courses/GSAC6017/tekbac\\_7.pdf](http://users.rsise.anu.edu.au/~daa/courses/GSAC6017/tekbac_7.pdf) - [Similar pages](#)

### [PS] [An introduction to boosting based classification Yoav FreundAT&T ...](#)

File Format: Adobe PostScript - [View as Text](#)  
 A popular statistical model is the **normal distribution**. ... estimating the **mean** and **variance** can be done accurately even from a small amount of training ...  
[www.cse.ucsd.edu/~yfreund/papers/QUAC2000.ps](http://www.cse.ucsd.edu/~yfreund/papers/QUAC2000.ps) - [Similar pages](#)

### [PDF] [Microsoft PowerPoint - Unit 07 - Clustering](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
**Weighting** the attributes might be necessary ... distribution parameter (eg, **mean**, **variance**) ... **fraud detection**, etc. and can be performed by ...  
[www.elet.polimi.it/upload/lanzi/msi/color/Unit%2007%20-%20Clustering.pdf](http://www.elet.polimi.it/upload/lanzi/msi/color/Unit%2007%20-%20Clustering.pdf) - [Similar pages](#)

### [Using Audit Tools - Part 4, Linear Regression Analysis - IT Audit ...](#)

Either **variance** analysis (which would analyze individual groups) or the ...  
 ACL is the market leader in data analysis/extraction, **fraud detection**, ...  
[www.theiia.org/itaudit/index.cfm?fuseaction=forum&fid=62](http://www.theiia.org/itaudit/index.cfm?fuseaction=forum&fid=62) - 41k - [Cached](#) - [Similar pages](#)

### [PDF] [Measuring Confidence Intervals in Link Discovery: A Bootstrap Approach](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
analysis, **fraud detection**, graph theory, pattern analysis and. link analysis.  
... **mean** and **variance** of MI for each individual in the group. ...  
[eksl.cs.umass.edu/papers/kdd-04-bootstrap.pdf](http://eksl.cs.umass.edu/papers/kdd-04-bootstrap.pdf) - [Similar pages](#)

[PDF] [Wavelet-based Data Reduction and Mining for Multiple Functional ...](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)

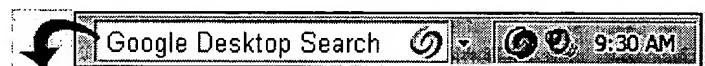
Figure 26 Different Noise-error **Variance** in RTCVD Data . . . . .

. . . M × N random errors with the **normal distribution**  $N(0, \sigma^2)$  . . .

[etd.gatech.edu/theses/available/etd-07092004-015303/unrestricted/jung\\_uk\\_200407\\_phd.pdf](http://etd.gatech.edu/theses/available/etd-07092004-015303/unrestricted/jung_uk_200407_phd.pdf) - [Similar pages](#)

Gooooooooogle ►

Result Page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [Next](#)



Google Desktop Search

9:30 AM

Free! Instantly find your email, files, media and web history. [Download now.](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [Help](#)

Welcome United States Patent and Trademark Office

[Search Results](#)[BROWSE](#)[SEARCH](#)[IEEE XPLORER GUIDE](#)

Results for "(((fraud detection&lt;or&gt;anomaly detection)&lt;or&gt;outlier detection) &lt;and&gt; (weighting &amp;I...)"

[e-mail](#)

Your search matched 17 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.» **Search Options**[View Session History](#)[New Search](#)

## Modify Search

 [»](#) Check to search only within this results set

## Display Format:

 Citation Citation & Abstract» **Key**

IEEE JNL IEEE Journal or Magazine

[Select](#) Article Information

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding



## 1. Nonlinear system input structure identification: two stage fuzzy curves and surfaces

Yinghua Lin; Cunningham, G.A., III; Coggeshall, S.V.; Jones, R.D.;  
Systems, Man and Cybernetics, Part A, IEEE Transactions on  
Volume 28, Issue 5, Sept. 1998 Page(s):678 - 684  
Digital Object Identifier 10.1109/3468.709615

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(332 KB\)](#) IEEE JNL

## 2. Model transitions in descending FLVQ

Baraldi, A.; Blonda, P.; Parmiggiani, F.; Pasquarello, G.; Satalino, G.;  
Neural Networks, IEEE Transactions on  
Volume 9, Issue 5, Sept. 1998 Page(s):724 - 738  
Digital Object Identifier 10.1109/72.712148

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(468 KB\)](#) IEEE JNL

## 3. Hybrid soft computing systems: industrial and commercial applications

Bonissone, P.P.; Yu-To Chen; Goebel, K.; Khedkar, P.S.;  
Proceedings of the IEEE  
Volume 87, Issue 9, Sept. 1999 Page(s):1641 - 1667  
Digital Object Identifier 10.1109/5.784245

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(584 KB\)](#) IEEE JNL

## 4. Time synchronization over the Internet using an adaptive frequency-locked loop

Levine, J.;  
Ultrasonics, Ferroelectrics and Frequency Control, IEEE Transactions on  
Volume 46, Issue 4, July 1999 Page(s):888 - 896  
Digital Object Identifier 10.1109/58.775655

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(996 KB\)](#) IEEE JNL

## 5. Maximizing land cover classification accuracies produced by decision trees at continental to

Friedl, M.A.; Brodley, C.E.; Strahler, A.H.;  
Geoscience and Remote Sensing, IEEE Transactions on  
Volume 37, Issue 2, Part 2, March 1999 Page(s):969 - 977  
Digital Object Identifier 10.1109/36.752215

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(544 KB\)](#) IEEE JNL

## 6. Author Index

Information Theory, IEEE Transactions on

Volume 46, Issue 7, Nov. 2000 Page(s):1 - 19

Digital Object Identifier 10.1109/TIT.2000.887900

[AbstractPlus](#) | Full Text: [PDF\(204 KB\)](#) IEEE JNL

7. **Learning patterns of activity using real-time tracking**

Stauffer, C.; Grimson, W.E.L.;

Pattern Analysis and Machine Intelligence, IEEE Transactions on

Volume 22, Issue 8, Aug. 2000 Page(s):747 - 757

Digital Object Identifier 10.1109/34.868677

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(2296 KB\)](#) IEEE JNL

8. **1998 IEEE International Conference on Systems, Man, and Cybernetics - vol. 3 of 5**

Systems, Man, and Cybernetics, 1998. 1998 IEEE International Conference on

Volume 3, 11-14 Oct. 1998 Page(s):0\_1 - 1\_31

[AbstractPlus](#) | Full Text: [PDF\(3940 KB\)](#) IEEE CNF

9. **1998 IEEE International Conference on Systems, Man, and Cybernetics**

Systems, Man, and Cybernetics, 1998. 1998 IEEE International Conference on

Volume 4, 11-14 Oct. 1998 Page(s):0\_1 - 1\_31

[AbstractPlus](#) | Full Text: [PDF\(3800 KB\)](#) IEEE CNF

10. **Time synchronization over the Internet using "autolock"**

Levine, J.;

Frequency Control Symposium, 1998. Proceedings of the 1998 IEEE International

27-29 May 1998 Page(s):241 - 249

Digital Object Identifier 10.1109/FREQ.1998.717911

[AbstractPlus](#) | Full Text: [PDF\(804 KB\)](#) IEEE CNF

11. **SMC'98 Conference Proceedings. 1998 IEEE International Conference on Systems, Man, and Cybernetics (Cat. No.98CH36218)**

Systems, Man, and Cybernetics, 1998. 1998 IEEE International Conference on

Volume 1, 11-14 Oct 1998 Page(s):0\_5

Digital Object Identifier 10.1109/ICSMC.1998.725373

[AbstractPlus](#) | Full Text: [PDF\(3620 KB\)](#) IEEE CNF

12. **1998 IEEE International Conference on Systems, Man, and Cybernetics**

Systems, Man, and Cybernetics, 1998. 1998 IEEE International Conference on

Volume 5, 11-14 Oct. 1998 Page(s):0\_2 - 0\_56

[AbstractPlus](#) | Full Text: [PDF\(3648 KB\)](#) IEEE CNF

13. **Proceedings of the 1998 IEEE International Conference on Acoustics, Speech and Signal Processing**

Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE International Conference on

Volume 6, 12-15 May 1998 Page(s):i - lxiii

[AbstractPlus](#) | Full Text: [PDF\(3428 KB\)](#) IEEE CNF

14. **Proceedings Of The 1998 IEEE International Conference On Acoustics, Speech And Signal Processing**

Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE International Conference on

Volume 1, 12-15 May 1998 Page(s):i - lxiii

[AbstractPlus](#) | Full Text: [PDF\(3604 KB\)](#) IEEE CNF

15. **Proceedings of the 1998 IEEE International Conference on Acoustics, Speech and Signal Processing**

Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE International Conference on

Volume 5, 12-15 May 1998 Page(s):i - lxiii

[AbstractPlus](#) | Full Text: [PDF\(3360 KB\)](#) IEEE CNF

 16. Proceedings Of The 1998 IEEE International Conference On Acoustics, Speech And Signal F  
Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE Inter  
on  
Volume 2, 12-15 May 1998 Page(s):i - ixiii  
[AbstractPlus](#) | Full Text: [PDF\(3572 KB\)](#) IEEE CNF

 17. Fraud detection in communication networks using neural and probabilistic methods  
Taniguchi, M.; Haft, M.; Holmen, J.; Tresp, V.;  
Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE Inter  
on  
Volume 2, 12-15 May 1998 Page(s):1241 - 1244 vol.2  
Digital Object Identifier 10.1109/ICASSP.1998.675496  
[AbstractPlus](#) | Full Text: [PDF\(364 KB\)](#) IEEE CNF



[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IE

Indexed by  
**Inspec**



Home | Login | Logout | Access Information | Help

Welcome United States Patent and Trademark Office

Search Results

BROWSE

SEARCH

IEEE XPLORER GUIDE

Results for "((fraud detection&lt;or&gt;anomaly detection)&lt;or&gt;outlier detection&lt;in&gt;metadata)"

Your search matched 1252 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by Relevance in Descending order.

[e-mail](#)

## » Search Options

## Modify Search

[View Session History](#) [»](#)[New Search](#) Check to search only within this results set

Display Format:

 Citation Citation & Abstract

## » Key

IEEE JNL IEEE Journal or Magazine

 Select

Article Information

View: 1-25 | [26-50](#) [51-75](#) [76-100](#) [101-125](#) [126-1252](#)

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

## 1. Anomalies as precursors of field failures

Elbaum, S.; Kanduri, S.; Andrews, A.A.;

Software Reliability Engineering, 2003. ISSRE 2003. 14th International Symposium on  
17-20 Nov. 2003 Page(s):108 - 118[AbstractPlus](#) | Full Text: [PDF\(388 KB\)](#) IEEE CNF

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

## 2. Survey of fraud detection techniques

Yufeng Kou; Chang-Tien Lu; Sirwongwattana, S.; Yo-Ping Huang;  
Networking, Sensing and Control, 2004 IEEE International Conference on  
Volume 2, 2004 Page(s):749 - 754 Vol.2  
Digital Object Identifier 10.1109/ICNSC.2004.1297040[AbstractPlus](#) | Full Text: [PDF\(1599 KB\)](#) IEEE CNF

## 3. Adaptive and automated detection of service anomalies in transaction-oriented WANs: network algorithms, implementation, and deployment

Ho, L.L.; Cavuto, D.J.; Papavassiliou, S.; Zawadzki, A.G.;  
Selected Areas in Communications, IEEE Journal on  
Volume 18, Issue 5, May 2000 Page(s):744 - 757  
Digital Object Identifier 10.1109/49.842990[AbstractPlus](#) | References | Full Text: [PDF\(1012 KB\)](#) IEEE JNL

## 4. Multivariate Gaussian MRF for multispectral scene segmentation and anomaly detection

Hazel, G.G.;  
Geoscience and Remote Sensing, IEEE Transactions on  
Volume 38, Issue 3, May 2000 Page(s):1199 - 1211  
Digital Object Identifier 10.1109/36.843012[AbstractPlus](#) | References | Full Text: [PDF\(2792 KB\)](#) IEEE JNL

## 5. Adaptive Real-Time Anomaly Detection with Improved Index and Ability to Forget

Burbeck, K.; Nadim-Tehrani, S.;  
Distributed Computing Systems Workshops, 2005. 25th IEEE International Conference on  
06-10 June 2005 Page(s):195 - 202  
Digital Object Identifier 10.1109/ICDCSW.2005.31[AbstractPlus](#) | Full Text: [PDF\(160 KB\)](#) IEEE CNF

## 6. Anomaly detection and classification for hyperspectral imagery

Chein-I Chang; Shao-Shan Chiang;

Geoscience and Remote Sensing, IEEE Transactions on

Volume 40, Issue 6, June 2002 Page(s):1314 - 1325

Digital Object Identifier 10.1109/TGRS.2002.800280

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(423 KB\)](#) IEEE JNL

**7. How to Increase security in mobile networks by anomaly detection**

Buschkes, R.; Kesdogan, D.; Reichl, P.;

Computer Security Applications Conference, 1998, Proceedings., 14th Annual

7-11 Dec. 1998 Page(s):3 - 12

Digital Object Identifier 10.1109/CSAC.1998.738558

[AbstractPlus](#) | Full Text: [PDF\(184 KB\)](#) IEEE CNF

**8. Condition Monitoring of 3G Cellular Networks Through Competitive Neural Models**

Barreto, G.A.; Mota, J.C.M.; Souza, L.G.M.; Frota, R.A.; Aguayo, L.;

Neural Networks, IEEE Transactions on

Volume 16, Issue 5, Sept. 2005 Page(s):1064 - 1075

Digital Object Identifier 10.1109/TNN.2005.853416

[AbstractPlus](#) | Full Text: [PDF\(536 KB\)](#) IEEE JNL

**9. Anomaly detection in IP networks**

Thottan, M.; Chuanyi Ji;

Signal Processing, IEEE Transactions on [see also Acoustics, Speech, and Signal Processing, IEEE

Volume 51, Issue 8, Aug. 2003 Page(s):2191 - 2204

Digital Object Identifier 10.1109/TSP.2003.814797

[AbstractPlus](#) | [References](#) | Full Text: [PDF\(651 KB\)](#) IEEE JNL

**10. A multiscale hypothesis testing approach to anomaly detection and localization from noisy**

Frakt, A.B.; Karl, W.C.; Willsky, A.S.;

Image Processing, IEEE Transactions on

Volume 7, Issue 6, June 1998 Page(s):825 - 837

Digital Object Identifier 10.1109/83.679425

[AbstractPlus](#) | Full Text: [PDF\(872 KB\)](#) IEEE JNL

**11. Trust Framework for P2P Networks Using Peer-Profile Based Anomaly Technique**

Stakhanova, N.; Basu, S.; Wong, J.; Stakhanov, O.;

Distributed Computing Systems Workshops, 2005. 25th IEEE International Conference on

06-10 June 2005 Page(s):203 - 209

Digital Object Identifier 10.1109/ICDCSW.2005.137

[AbstractPlus](#) | Full Text: [PDF\(152 KB\)](#) IEEE CNF

**12. Adaptive network/service fault detection in transaction-oriented wide area networks**

Ho, L.L.; Cavuto, D.J.; Hasan, M.Z.; Feather, F.E.; Papavassiliou, S.; Zawadzki, A.G.;

Integrated Network Management, 1999. Distributed Management for the Networked Millennium. Pr

IFIP/IEEE International Symposium on

24-28 May 1999 Page(s):761 - 775

Digital Object Identifier 10.1109/INM.1999.770721

[AbstractPlus](#) | Full Text: [PDF\(800 KB\)](#) IEEE CNF

**13. Synthesizing test data for fraud detection systems**

Barse, E.L.; Kvarnstrom, H.; Jonsson, E.;

Computer Security Applications Conference, 2003. Proceedings. 19th Annual

2003 Page(s):384 - 394

Digital Object Identifier 10.1109/CSAC.2003.1254343

[AbstractPlus](#) | Full Text: [PDF\(297 KB\)](#) IEEE CNF

**14. Utilizing statistical characteristics of N-grams for intrusion detection**

Li Zhuowei; Das, A.; Nandi, S.;

Cyberworlds, 2003. Proceedings. 2003 International Conference on

2003 Page(s):486 - 493  
Digital Object Identifier 10.1109/CYBER.2003.1253494  
[AbstractPlus](#) | Full Text: [PDF](#)(311 KB) IEEE CNF

 15. A serial combination of anomaly and misuse IDSe applied to HTTP traffic  
Tombini, E.; Debar, H.; Me, L.; Ducasse, M.;  
Computer Security Applications Conference, 2004. 20th Annual  
6-10 Dec. 2004 Page(s):428 - 437  
Digital Object Identifier 10.1109/CSAC.2004.4  
[AbstractPlus](#) | Full Text: [PDF](#)(240 KB) IEEE CNF

 16. Decentralized trust management and accountability in federated systems  
Chun, B.N.; Bavier, A.;  
System Sciences, 2004. Proceedings of the 37th Annual Hawaii International Conference on  
5-8 Jan. 2004 Page(s):279 - 287  
[AbstractPlus](#) | Full Text: [PDF](#)(235 KB) IEEE CNF

 17. State transition analysis: a rule-based intrusion detection approach  
Ilgun, K.; Kemmerer, R.A.; Porras, P.A.;  
Software Engineering, IEEE Transactions on  
Volume 21, Issue 3, March 1995 Page(s):181 - 199  
Digital Object Identifier 10.1109/32.372146  
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(1864 KB) IEEE JNL

 18. Neural fraud detection in credit card operations  
Dorronsoro, J.R.; Giné, F.; Sánchez, C.; Cruz, C.S.;  
Neural Networks, IEEE Transactions on  
Volume 8, Issue 4, July 1997 Page(s):827 - 834  
Digital Object Identifier 10.1109/72.595879  
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(176 KB) IEEE JNL

 19. Robustness of the Markov-chain model for cyber-attack detection  
Nong Ye; Yebin Zhang; Borror, C.M.;  
Reliability, IEEE Transactions on  
Volume 53, Issue 1, March 2004 Page(s):116 - 123  
Digital Object Identifier 10.1109/TR.2004.823851  
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(304 KB) IEEE JNL

 20. Probabilistic techniques for intrusion detection based on computer audit data  
Nong Ye; Xiangyang Li; Qiang Chen; Emran, S.M.; Mingming Xu;  
Systems, Man and Cybernetics, Part A, IEEE Transactions on  
Volume 31, Issue 4, July 2001 Page(s):266 - 274  
Digital Object Identifier 10.1109/3468.935043  
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(260 KB) IEEE JNL

 21. Learning activity patterns using fuzzy self-organizing neural network  
Weiming Hu; Xie, D.; Tieniu Tan; Maybank, S.;  
Systems, Man and Cybernetics, Part B, IEEE Transactions on  
Volume 34, Issue 3, June 2004 Page(s):1618 - 1626  
Digital Object Identifier 10.1109/TSMCB.2004.826829  
[AbstractPlus](#) | Full Text: [PDF](#)(768 KB) IEEE JNL

 22. Meta IDS environments: an event message anomaly detection approach  
Tolle, J.; Jahnke, M.; Bussmann, M.; Henkel, S.;  
Information Assurance, 2005. Proceedings. Third IEEE International Workshop on  
23-24 March 2005 Page(s):85 - 94  
Digital Object Identifier 10.1109/IWIA.2005.13

[AbstractPlus](#) | Full Text: [PDF\(3464 KB\)](#) IEEE CNF**23. Anomaly detection for internetworms**

Al-Hammadi, Y.; Leckie, C.;

Integrated Network Management, 2005. IM 2005. 2005 9th IFIP/IEEE International Symposium on  
15-19 May 2005 Page(s):133 - 146[AbstractPlus](#) | Full Text: [PDF\(298 KB\)](#) IEEE CNF**24. Conversation exchange dynamics for real-time network monitoring and anomaly detection**

Zachary, J.; McEachen, J.; Ettlich, D.;

Information Assurance Workshop, 2004. Proceedings. Second IEEE International  
2004 Page(s):59 - 70  
Digital Object Identifier 10.1109/IWIA.2004.1288038[AbstractPlus](#) | Full Text: [PDF\(1649 KB\)](#) IEEE CNF**25. Load Characterization and Anomaly Detection for Voice Over IP Traffic**

Mandjes, M.; Sanjeev, I.; Stolyar, A.L.;

Neural Networks, IEEE Transactions on  
Volume 16, Issue 5, Sept. 2005 Page(s):1019 - 1026  
Digital Object Identifier 10.1109/TNN.2005.853427[AbstractPlus](#) | Full Text: [PDF\(896 KB\)](#) IEEE JNL

View: 1-25 |

Indexed by  
**Inspec**[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IE

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [AIE](#)[Search Session History](#)[BROWSE](#)[SEARCH](#)[IEEE XPLOR GUIDE](#)

Fri, 7 Oct 2005, 3:44:32 PM EST

Edit an existing query or compose a new query in the Search Query Display.

**Search Query Display** **Select a search number (#) to:**

- Add a query to the Search Query Display
- Combine search queries using AND, OR, or NOT
- Delete a search
- Run a search

**Recent Search Queries**

#1	(( fraud detection<in>ti ) <or> ( anomaly detection<in>ti ) )<and> ( outlier detection<in>ti )
#2	(fraud detection<and>anomaly detection)<and>outlier detection
#3	( credit card fraud detection<in>de)
#4	( fraud detection techniques<in>de)
#5	( telecommunication fraud detection<in>de)
#6	(fraud detection<and>anomaly detection)<and>outlier detection
#7	((fraud detection<or>anomaly detection)<or>outlier detection<IN>metadata)
#8	((fraud detection<or>anomaly detection)<or>outlier detection) <and> (pyr >= 1951 <and> pyr <= 2000)
#9	((((fraud detection<or>anomaly detection)<or>outlier detection) <and> (pyr >= 1998 <and> pyr <= 2000)<IN>metadata)
#10	((((fraud detection<or>anomaly detection)<or>outlier detection) <and> (weighting <and> (pyr >= 1998 <and> pyr <= 2000)<in>metadata)
#11	((((fraud detection<or>anomaly detection)<or>outlier detection) <and> (weighting <and> variance <and> mean) <and> (pyr >= 1998 <and> pyr <= 2000) <in>metadata)
#12	((((fraud detection<or>anomaly detection)<or>outlier detection) <and> (weighting <and> variance <and> mean <and> time series) <and> (pyr >= 1998 <and> pyr <= 2000)<in>metadata)

[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IE

**Indexed by**  
**Inspec®**

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [About Us](#)

Welcome United States Patent and Trademark Office

**Search Results**[BROWSE](#)[SEARCH](#)[IEEE XPLORE GUIDE](#)

Results for "(bacon&lt;and&gt;finite mixture)"

Your search matched 2 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by **Relevance** in **Descending** order.[» Search Options](#)[View Session History](#)[Modify Search](#)[New Search](#) [»](#) Check to search only within this results set[» Key](#)

Display Format:

 Citation Citation & Abstract

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

Select Article Information

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

1. **Automated classification and analysis of the calcium response of single T lymphocytes using a neural network approach**  
Payne, S.J.; Arrol, H.P.; Hunt, S.V.; Young, S.P.;  
Neural Networks, IEEE Transactions on  
Volume 16, Issue 4, July 2005 Page(s):949 - 958  
Digital Object Identifier 10.1109/TNN.2005.849820  
[AbstractPlus](#) | Full Text: [PDF\(400 KB\)](#) IEEE JNL

2. **Exploiting efficient data mining techniques to enhance intrusion detection systems**  
Chang-Tien Lu; Boedihardjo, A.P.; Manalwar, P.;  
Information Reuse and Integration, Conf., 2005. IRI -2005 IEEE International Conference on.  
Aug. 15-17, 2005 Page(s):512 - 517  
[AbstractPlus](#) | Full Text: [PDF\(131 KB\)](#) IEEE CNF

[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IEEE

Indexed by  
**Inspec**

The image shows a Google search results page. At the top left is the Google logo. To its right are navigation links: Web, Images, Groups, News, Froogle, Local [New!], and more ». Below these is a search bar containing the query ("finite mixture" OR bacon) "outlier detection". To the right of the search bar are two buttons: "Search" and "Advanced Search Preferences".

**Web**Results 1 - 10 of about 675 for ([finite mixture](#) OR [bacon](#)) ["outlier detection"](#). (0.53 seconds)**[PDF] Outlier Detection: nagdmc bacon**File Format: PDF/Adobe Acrobat - [View as HTML](#)**Outlier Detection: nagdmc bacon.** Purpose. nagdmc bacon identifies data records that outlie a multivariate Normal distribution by using the ...[www.nag-j.co.jp/pdf/nagdmc\\_bacon.pdf](#) - [Similar pages](#)**outlier detection****Bacon**, writing in Novum Organum about 400 years ago said: "Errors of Nature, ...Perform **outlier detection**, ie search the sample space for candidates. ...[www.autobox.com/outlier.html](#) - 11k - [Cached](#) - [Similar pages](#)**Wiley::Robust Regression and Outlier Detection****Finite Mixture Models** (Hardcover) by Geoffrey McLachlan, David Peel. General Data Analysis & Data Mining. Robust Regression and **Outlier Detection** [E-Book] ...[www.wiley.com/WileyTitle/productCd-0471725374.html](#) - 32k - [Cached](#) - [Similar pages](#)**[PPT] binf.gmu.edu/~jsolka/s2005/binf733/binf733\_spg05\_o...**File Format: Microsoft Powerpoint 97 - [View as HTML](#)**BINF 733 Spring 2005 Statistical Methods of Outlier Detection** ... Sir Francis**Bacon** Revisited. To identify outliers we need some sort of model to start with ...[Similar pages](#)**[PDF] A Comparative Study of RNN for Outlier Detection in Data Mining**File Format: PDF/Adobe Acrobat - [View as HTML](#)We are not aware of previous empirical comparisons of **outlier detection** ...**BACON**: Blocked adaptive, computationally-efficient outlier nominators. ...[www.act.cmis.csiro.au/edm/papers/tr02102.pdf](#) - [Similar pages](#)**OUTLIER DETECTION****OUTLIER DETECTION** (Friday 31st of May). **Outlier Detection** ... DETECTING MULTIVARIATE OUTLIERS IN INCOMPLETE SURVEY DATA WITH THE **BACON-EM** ALGORITHM ...[erin.mit.jyu.fi/dataclean/abstracts/node26.html](#) - 3k - [Cached](#) - [Similar pages](#)**[PDF] OUTLIER DETECTION AND CLUSTERING BY PARTIAL MIXTURE MODELING**File Format: PDF/Adobe Acrobat - [View as HTML](#)The general topic of **outlier detection** is discussed in Barnett and Lewis ...[15] McLachlan, GJ and Peel, D. (2001), **Finite mixture models**, John Wiley ...[www.stat.rice.edu/~scottdw/papers/l2e/scott-prag04.pdf](#) - [Similar pages](#)**[PS] Question 30: A two-dimensional dataset is collected: A i = f n (I ...**File Format: Adobe PostScript - [View as Text](#)The first is **outlier detection** in parametric regression models, and the second is bump hunting in ... as well as the paper by **Bacon-Shone** and Fung (1987). ...[www.stat.psu.edu/~mnga/scca/q\\_and\\_a/qa30.ps](#) - [Similar pages](#)**On-line unsupervised outlier detection using finite mixtures with ...**On-line unsupervised **outlier detection** using finite mixtures with discounting... Hang Li , Kenji Yamanishi, Topic analysis using a **finite mixture** model, ...[portal.acm.org/citation.cfm?id=347160](#) - [Similar pages](#)

**Feature bagging for outlier detection**

**Outlier detection** has recently become an important problem in many industrial and financial ... 7 N. Billor, A. Hadi and P. Velleman **BACON: Blocked Adaptive ...**  
portal.acm.org/citation.cfm?id=1081870.1081891 - [Similar pages](#)

# Gooooooooogle ►

Result Page:    [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)    [Next](#)



Google Desktop Search

9:30 AM

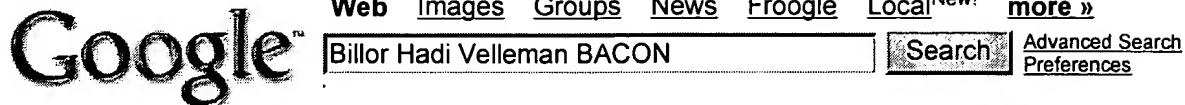
Free! Instantly find your email, files, media and web history. [Download now.](#)

[\("finite mixture" OR bacon\) "outlier d](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google

**Web**Results 1 - 10 of about 46 for **Billor Hadi Velleman BACON**. (0.47 seconds)**[PDF] A Set of XLispStat Subroutines for Detecting Outliers**File Format: PDF/Adobe Acrobat - [View as HTML](#)

[8] N. **Billor**, AS **Hadi**, and PF **Velleman**. **Bacon**: blocked adaptive computationally efficient outlier nominators. Computational Statistics & Data Analysis, ...

[www.ci.tuwien.ac.at/Conferences/DSC-2001/Proceedings/Bartkowiak.pdf](http://www.ci.tuwien.ac.at/Conferences/DSC-2001/Proceedings/Bartkowiak.pdf) - [Similar pages](#)

**Ali Hadi's Research Activities**

**Billor, N., Hadi, AS and Velleman , PF** (2000), "BACON: Blocked Adaptive Computationally-Efficient Outlier Nominators," Computational Statist & Data Analysis ...

[www.aucegypt.edu/faculty/hadi/Research.html](http://www.aucegypt.edu/faculty/hadi/Research.html) - 23k - [Cached](#) - [Similar pages](#)

**Ali Hadi's Publications**

**Billor, N., Hadi, AS, and Velleman , PF** (2000), "BACON: Blocked Adaptive Computationally-Efficient Outlier Nominators," Computational Statistics & Data ...

[www.aucegypt.edu/faculty/hadi/Publications.html](http://www.aucegypt.edu/faculty/hadi/Publications.html) - 7k - [Cached](#) - [Similar pages](#)

**[PDF] Outlier Detection: nagdmc bacon**File Format: PDF/Adobe Acrobat - [View as HTML](#)

**Billor N. Hadi A. and Velleman P.** (2000) **BACON**: blocked adaptive computationally efficient. outlier nominators Comp. Stats. and Data Analysis 34 279–298. ...

[www.nag-j.co.jp/pdf/nagdmc\\_bacon.pdf](http://www.nag-j.co.jp/pdf/nagdmc_bacon.pdf) - [Similar pages](#)

**[PDF] Microsoft PowerPoint - tutorial.ppt**File Format: PDF/Adobe Acrobat - [View as HTML](#)

**N. Billor, A. Hadi, P. Velleman, BACON**: blocked adaptive computationally efficient. outlier nominators, Computational Statistics & Data Analysis, 34, ...

[www.cs.umn.edu/~aleks/pakdd04\\_tutorial.pdf](http://www.cs.umn.edu/~aleks/pakdd04_tutorial.pdf) - [Similar pages](#)

**[PDF] Robust Weighted LAD Regression**File Format: PDF/Adobe Acrobat - [View as HTML](#)

**Billor, N., Hadi, AS, and Velleman, PF** (2000), "BACON: blocked adaptive computationally efficient outlier nominators," Computational Statistics and Data ...

[www-stat.wharton.upenn.edu/Seminars/Seminars-Spring2005/simonoffpapers/robustWLAD.pdf](http://www-stat.wharton.upenn.edu/Seminars/Seminars-Spring2005/simonoffpapers/robustWLAD.pdf) - [Similar pages](#)

**Tek bir bileşen içerisinde büyük ölçüde tipik olan gözlemler; her ...**

**Billor, Hadi ve Velleman** (2000) tarafından tanımlanan **BACON** algoritması da bu

... **Billor, N. , Hadi, AS and Velleman, PF**(2000), "BACON:Blocked Adaptive ...

[idari.cu.edu.tr/sempozyum/bil27.htm](http://idari.cu.edu.tr/sempozyum/bil27.htm) - 130k - [Cached](#) - [Similar pages](#)

**Feature bagging for outlier detection**

7 N. **Billor, A. Hadi** and P. **Velleman** **BACON**: Blocked Adaptive Computationally-Efficient Outlier Nominators, Computational Statist & Data Analysis, vol. ...

[portal.acm.org/citation.cfm?id=1081870.1081891](http://portal.acm.org/citation.cfm?id=1081870.1081891) - [Similar pages](#)

**[PDF] The multivariate BACON algorithm applied to PLSR and PCR**File Format: PDF/Adobe Acrobat - [View as HTML](#)

multivariate **BACON** algorithm (**Billor et al.** (2000)) and we implement it in PLSR and

... [1] **Billor, N. and Hadi, AS and Velleman, PF** (2000) **BACON**: Blocked ...

[www.ems2005.no/abstract/abstracts/131468.pdf](http://www.ems2005.no/abstract/abstracts/131468.pdf) - [Similar pages](#)

Vita

â€¢ A Billor, N., Hadi, AS, and Velleman, PF (2000), "BACON: Blocked Adaptive Computationally-Efficient Outlier Nominators," Computational Statistics and ...  
[www.ilr.cornell.edu/directory/ash4/vita.htm](http://www.ilr.cornell.edu/directory/ash4/vita.htm) - 47k - [Cached](#) - [Similar pages](#)



Free! Instantly find your email, files, media and web history. [Download now.](#)

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2005 Google

[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [Help](#)

Welcome United States Patent and Trademark Office

**SEARCH RESULTS****BROWSE****SEARCH****IEEE XPLORER GUIDE**[e-mail](#)

Results for "((bacon&lt;or&gt;finite mixture)&lt;and&gt;outlier&lt;in&gt;metadata)"

Your search matched 9 of 1242336 documents.

A maximum of 100 results are displayed, 25 to a page, sorted by Relevance in Descending order.

**» Search Options**[View Session History](#)[New Search](#)**Modify Search** [»](#) Check to search only within this results set**Display Format:** Citation Citation & Abstract**» Key****IEEE JNL** IEEE Journal or Magazine**IEE JNL** IEE Journal or Magazine**IEEE CNF** IEEE Conference Proceeding**IEE CNF** IEE Conference Proceeding**IEEE STD** IEEE Standard**Select Article Information**

**1.** Robust parameter estimation of intensity distributions for brain magnetic resonance Images  
Schroeter, P.; Vesin, J.-M.; Langenberger, T.; Meuli, R.;  
Medical Imaging, IEEE Transactions on  
Volume 17, Issue 2, April 1998 Page(s):172 - 186  
Digital Object Identifier 10.1109/42.700730  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(372 KB\)](#) IEEE JNL

**2.** A mixture model and EM-based algorithm for class discovery, robust classification, and outlier detection in mixed labeled/unlabeled data sets  
Miller, D.J.; Browning, J.;  
Pattern Analysis and Machine Intelligence, IEEE Transactions on  
Volume 25, Issue 11, Nov. 2003 Page(s):1468 - 1483  
Digital Object Identifier 10.1109/TPAMI.2003.1240120  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(603 KB\)](#) IEEE JNL

**3.** Bias in robust estimation caused by discontinuities and multiple structures  
Stewart, C.V.;  
Pattern Analysis and Machine Intelligence, IEEE Transactions on  
Volume 19, Issue 8, Aug. 1997 Page(s):818 - 833  
Digital Object Identifier 10.1109/34.608280  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(404 KB\)](#) IEEE JNL

**4.** Vector quantization based on Gaussian mixture models  
Hedelin, P.; Skoglund, J.;  
Speech and Audio Processing, IEEE Transactions on  
Volume 8, Issue 4, July 2000 Page(s):385 - 401  
Digital Object Identifier 10.1109/89.848220  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(744 KB\)](#) IEEE JNL

**5.** Outlier modeling in image matching  
Hasler, D.; Sbaiz, L.; Susstrunk, S.; Vetterli, M.;  
Pattern Analysis and Machine Intelligence, IEEE Transactions on  
Volume 25, Issue 3, March 2003 Page(s):301 - 315  
Digital Object Identifier 10.1109/TPAMI.2003.1182094  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(4870 KB\)](#) IEEE JNL

**6.** Outlier mining in large high-dimensional data sets

Angiulli, F.; Pizzuti, C.;  
Knowledge and Data Engineering, IEEE Transactions on  
Volume 17, Issue 2, Feb. 2005 Page(s):203 - 215  
Digital Object Identifier 10.1109/TKDE.2005.31  
[AbstractPlus](#) | [References](#) | Full Text: [PDF\(1208 KB\)](#) IEEE JNL

■ 7. Outlier detection using k-nearest neighbour graph

Hautamaki, V.; Karkkainen, I.; Franti, P.;  
Pattern Recognition, 2004. ICPR 2004. Proceedings of the 17th International Conference on  
Volume 3, 23-26 Aug. 2004 Page(s):430 - 433 Vol.3  
Digital Object Identifier 10.1109/ICPR.2004.1334558

[AbstractPlus](#) | Full Text: [PDF\(383 KB\)](#) IEEE CNF

■ 8. GLOF: a new approach for mining local outlier

Sheng-Yi Jiang; Qing-Hua Li; Ken-Li Li; Hui Wang; Zhong-Lou Meng;  
Machine Learning and Cybernetics, 2003 International Conference on  
Volume 1, 2-5 Nov. 2003 Page(s):157 - 162 Vol.1

[AbstractPlus](#) | Full Text: [PDF\(591 KB\)](#) IEEE CNF

■ 9. Performance bounds for LPC spectrum quantization

Hedelin, P.; Skoglund, J.; Samuelsson, J.;  
Acoustics, Speech, and Signal Processing, 1999. ICASSP '99. Proceedings., 1999 IEEE International Conference on  
Volume 2, 15-19 March 1999 Page(s):677 - 680 vol.2  
Digital Object Identifier 10.1109/ICASSP.1999.759757

[AbstractPlus](#) | Full Text: [PDF\(312 KB\)](#) IEEE CNF

Indexed by  
**Inspec®**

[Help](#) [Contact Us](#) [Privacy](#)

© Copyright 2005 IE

 **PORTAL**  
USPTO

[Subscribe \(Full Service\)](#) [Register \(Limited Service, Free\)](#) [Login](#)

**Search:**

"finite mixture" "outlier detection"

THE ACM DIGITAL LIBRARY

 [Feedback](#) [Report a problem](#) [Satisfaction survey](#)

Terms used [finite mixture outlier detection](#)

Found 121 of 164,603

Sort results by

relevance

 [Save results to a Binder](#)Try an [Advanced Search](#)

Display results

expanded form

 [Search Tips](#)Try this search in [The ACM Guide](#) [Open results in a new window](#)

Results 1 - 20 of 121

Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [next](#)Relevance scale 

**1** [Industry/government track posters: Tracking dynamics of topic trends using a finite mixture model](#) 

Satoshi Morinaga, Kenji Yamanishi

August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**Full text available:  [pdf\(168.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In a wide range of business areas dealing with text data streams, including CRM, knowledge management, and Web monitoring services, it is an important issue to discover topic trends and analyze their dynamics in real-time. Specifically we consider the following three tasks in topic trend analysis: 1)*Topic Structure Identification*; identifying what kinds of main topics exist and how important they are, 2)*Topic Emergence Detection*; detecting the emergence of a new topic and recognizi ...

**Keywords:** CRM, model selection, text mining, topic analysis

**2** [Poster papers: A unifying framework for detecting outliers and change points from non-stationary time series data](#) 

Kenji Yamanishi, Jun-ichi Takeuchi

July 2002 **Proceedings of the eighth ACM SIGKDD international conference on Knowledge discovery and data mining**Full text available:  [pdf\(572.91 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We are concerned with the issues of outlier detection and change point detection from a data stream. In the area of data mining, there have been increased interest in these issues since the former is related to fraud detection, rare event discovery, etc., while the latter is related to event/trend by change detection, activity monitoring, etc. Specifically, it is important to consider the situation where the data source is non-stationary, since the nature of data source may change over time in r ...

**3** [On-line unsupervised outlier detection using finite mixtures with discounting learning algorithms](#) 

Kenji Yamanishi, Jun-Ichi Takeuchi, Graham Williams, Peter Milne

August 2000 **Proceedings of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining**Full text available:  [pdf\(210.57 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

4 Discovering outlier filtering rules from unlabeled data: combining a supervised learner with an unsupervised learner

Kenji Yamanishi, Jun-ichi Takeuchi

August 2001 **Proceedings of the seventh ACM SIGKDD international conference on Knowledge discovery and data mining**

Full text available:  pdf(562.85 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper is concerned with the problem of detecting outliers from unlabeled data. In prior work we have developed SmartSifter, which is an on-line outlier detection algorithm based on unsupervised learning from data. On the basis of SmartSifter this paper yields a new framework for outlier filtering using both supervised and unsupervised learning techniques iteratively in order to make the detection process more effective and more understandable. The outline of the framework is as follows: In ...

5 Industry/government track posters: Mining traffic data from probe-car system for travel time prediction

Takayuki Nakata, Jun-ichi Takeuchi

August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**

Full text available:  pdf(297.21 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We are developing a technique to predict travel time of a vehicle for an objective road section, based on real time traffic data collected through a probe-car system. In the area of Intelligent Transport System (ITS), travel time prediction is an important subject. Probe-car system is an upcoming data collection method, in which a number of vehicles are used as moving sensors to detect actual traffic situation. It can collect data concerning much larger area, compared with traditional fixed dete ...

**Keywords:** ITS, information criterion, probe-car, time series, travel time

6 Industry/government track papers: Eigenspace-based anomaly detection in computer systems

Tsuyoshi IDÉ, Hisashi KASHIMA

August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**

Full text available:  pdf(434.19 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We report on an automated runtime anomaly detection method at the application layer of multi-node computer systems. Although several network management systems are available in the market, none of them have sufficient capabilities to detect faults in multi-tier Web-based systems with redundancy. We model a Web-based system as a weighted graph, where each node represents a "service" and each edge represents a dependency between services. Since the edge weights vary greatly over time, the problem ...

**Keywords:** Perron-Frobenius theorem, principal eigenvector, singular value decomposition, time sequence of graphs, von Mises-Fisher distribution

7 Computer security (SEC): Unsupervised learning techniques for an intrusion detection system

Stefano Zanero, Sergio M. Savarese

March 2004 **Proceedings of the 2004 ACM symposium on Applied computing**

Full text available:  pdf(337.99 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

With the continuous evolution of the types of attacks against computer networks, traditional intrusion detection systems, based on pattern matching and static signatures, are increasingly limited by their need of an up-to-date and comprehensive knowledge base. Data mining techniques have been successfully applied in host-based intrusion detection. Applying data mining techniques on raw network data, however, is made difficult by the sheer size of the input; this is usually avoided by discarding ...

**Keywords:** K-means, anomaly detection, intrusion detection, principal direction divisive partitioning, quality of clusters, self-organizing maps, unsupervised clustering

## 8 Why so many clustering algorithms: a position paper

Vladimir Estivill-Castro

June 2002 **ACM SIGKDD Explorations Newsletter**, Volume 4 Issue 1

Full text available:  pdf(1.36 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We argue that there are many clustering algorithms, because the notion of "cluster" cannot be precisely defined. Clustering is in the eye of the beholder, and as such, researchers have proposed many induction principles and models whose corresponding optimization problem can only be approximately solved by an even larger number of algorithms. Therefore, comparing clustering algorithms, must take into account a careful understanding of the inductive principles involved.

**Keywords:** clustering, clustering criterion, inductive principle

## 9 Research track paper: Feature bagging for outlier detection

Aleksandar Lazarevic, Vipin Kumar

August 2005 **Proceeding of the eleventh ACM SIGKDD international conference on Knowledge discovery in data mining KDD '05**

Full text available:  pdf(656.54 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Outlier detection has recently become an important problem in many industrial and financial applications. In this paper, a novel feature bagging approach for detecting outliers in very large, high dimensional and noisy databases is proposed. It combines results from multiple outlier detection algorithms that are applied using different set of features. Every outlier detection algorithm uses a small subset of features that are randomly selected from the original feature set. As a result, each out ...

**Keywords:** bagging, detection rate, false alarm, feature subsets, integration, outlier detection

## 10 An effective and efficient algorithm for high-dimensional outlier detection

C. Aggarwal, S. Yu

April 2005 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 14 Issue 2

Full text available:  pdf(162.48 KB) Additional Information: [full citation](#), [abstract](#)

The outlier detection problem has important applications in the field of fraud detection, network robustness analysis, and intrusion detection. Most such applications are most important for high-dimensional domains in which the data can contain hundreds of dimensions. Many recent algorithms have been proposed for outlier detection that use several concepts of proximity in order to find the outliers based on their relationship to the other points in the data. However, in high-dimensional space, t ...

**Keywords:** Data mining, High-dimensional spaces, Outlier detection

**11 KM-2 (knowledge management): clustering II: A vertical distance-based outlier detection method with local pruning**

Dongmei Ren, Imad Rahal, William Perrizo, Kirk Scott

November 2004 **Proceedings of the thirteenth ACM conference on Information and knowledge management**

Full text available:  pdf(265.46 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

"One person's noise is another person's signal". Outlier detection is used to clean up datasets and also to discover useful anomalies, such as criminal activities in electronic commerce, computer intrusion attacks, terrorist threats, agricultural pest infestations, etc. Thus, outlier detection is critically important in the information-based society. This paper focuses on finding outliers in large datasets using distance-based methods. First, to speedup outlier detections, we revise Knorr and ...

**Keywords:** distance-based, neighborhood search, outlier detection, p-tree, pruning

**12 Outlier detection for high dimensional data**

Charu C. Aggarwal, Philip S. Yu

May 2001 **ACM SIGMOD Record , Proceedings of the 2001 ACM SIGMOD international conference on Management of data**, Volume 30 Issue 2

Full text available:  pdf(197.25 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The outlier detection problem has important applications in the field of fraud detection, network robustness analysis, and intrusion detection. Most such applications are high dimensional domains in which the data can contain hundreds of dimensions. Many recent algorithms use concepts of proximity in order to find outliers based on their relationship to the rest of the data. However, in high dimensional space, the data is sparse and the notion of proximity fails to retain its meaningfulness. ...

**13 Document classification using a finite mixture model**

Hang Li, Kenji Yamanishi

July 1997 **Proceedings of the 35th annual meeting on Association for Computational Linguistics , Proceedings of the eighth conference on European chapter of the Association for Computational Linguistics**

Full text available:  pdf(769.56 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)  
 Publisher Site

We propose a new method of classifying documents into categories. We define for each category a *finite mixture model* based on *soft clustering* of words. We treat the problem of classifying documents as that of conducting statistical hypothesis testing over finite mixture models, and employ the EM algorithm to efficiently estimate parameters in a finite mixture model. Experimental results indicate that our method outperforms existing methods.

**14 Artificial intelligence #2: Network flow for outlier detection**

Ying Liu, Alan P. Sprague, Elliot Lefkowitz

April 2004 **Proceedings of the 42nd annual Southeast regional conference**

Full text available:  pdf(255.64 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Detecting outliers is an important topic in data mining. Sometimes the outliers are more interesting than the rest of the data. Outlier identification has lots of applications, such as intrusion detection, and unusual usage of credit cards or telecommunication services. In this

paper, we propose a novel method for outlier identification which is based on network flow. We use the well known Maximum Flow Minimum Cut theorem from graph theory to find the outliers and strong outlier groups. Especial ...

**Keywords:** Maximum Flow Minimum Cut, data mining, graph theory, network flow, outlier detection

**15 Data mining (DM): Neighborhood based detection of anomalies in high dimensional spatio-temporal sensor datasets** 

Nabil R. Adam, Vandana Pursnani Janeja, Vijayalakshmi Atluri

March 2004 **Proceedings of the 2004 ACM symposium on Applied computing**

Full text available:  pdf(370.45 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

The behavior of spatial objects is under the influence of nearby spatial processes. Therefore in order to perform any type of spatial analysis we need to take into account not only the spatial relationships among objects but also the underlying spatial processes and other spatial features in the vicinity that influence the behavior of a given spatial object. In this paper, we address the outlier detection by refining the concept of a neighborhood of an object, which essentially characterizes sim ...

**Keywords:** macro neighborhood, micro neighborhood, outliers, sensors, spatial neighborhood

**16 Detecting graph-based spatial outliers: algorithms and applications (a summary of results)** 

Shashi Shekhar, Chang-Tien Lu, Pusheng Zhang

August 2001 **Proceedings of the seventh ACM SIGKDD international conference on Knowledge discovery and data mining**

Full text available:  pdf(590.38 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Identification of outliers can lead to the discovery of unexpected, interesting, and useful knowledge. Existing methods are designed for detecting spatial outliers in multidimensional geometric data sets, where a distance metric is available. In this paper, we focus on detecting spatial outliers in graph structured data sets. We define statistical tests, analyze the statistical foundation underlying our approach, design several fast algorithms to detect spatial outliers, and provide a cost model ...

**Keywords:** Outlier Detection, Spatial Data Mining, Spatial Graphs

**17 Research track posters: Locating secret messages in images** 

Ian Davidson, Goutam Paul

August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**

Full text available:  pdf(474.29 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Steganography involves hiding messages in innocuous media such as images, while steganalysis is the field of detecting these secret messages. The ultimate goal of steganalysis is two-fold: making a binary classification of a file as stego-bearing or innocent, and secondly, locating the hidden message with an aim to extracting, sterilizing or manipulating it. Almost all steganalysis approaches (known as attacks) focus on the first of these two issues. In this paper, we explore the difficult relat ...

**Keywords:** outlier detection, steganalysis, steganography

**18 Statistical methods I: Scalable robust covariance and correlation estimates for data mining**

Fatemah A. Alqallaf, Kjell P. Konis, R. Douglas Martin, Ruben H. Zamar

July 2002 **Proceedings of the eighth ACM SIGKDD international conference on Knowledge discovery and data mining**

Full text available: [pdf\(899.15 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Covariance and correlation estimates have important applications in data mining. In the presence of outliers, classical estimates of covariance and correlation matrices are not reliable. A small fraction of outliers, in some cases even a single outlier, can distort the classical covariance and correlation estimates making them virtually useless. That is, correlations for the vast majority of the data can be very erroneously reported; principal components transformations can be misleading; and mu ...

**Keywords:** data mining, outliers, robust estimators, robust statistics, scalable algorithm

**19 Detecting region outliers in meteorological data**

Jiang Zhao, Chang-Tien Lu, Yufeng Kou

November 2003 **Proceedings of the 11th ACM international symposium on Advances in geographic information systems**

Full text available: [pdf\(774.81 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Spatial outliers are the spatial objects with distinct features from their surrounding neighbors. Detection of spatial outliers helps reveal important and valuable information from large spatial data sets. In the field of meteorology, for example, spatial outliers can be associated with disastrous natural events such as tornadoes, hurricane, and forest fires. Previous study of spatial outlier mainly focuses on point data. However, in the meteorological data or other applications, spatial outlier ...

**Keywords:** meteorological data, outlier detection, spatial data mining

**20 Analysis methodology: Simulation input modeling: prior and candidate models in the Bayesian analysis of finite mixtures**

Russell C. H. Cheng, Christine S. M. Currie

December 2003 **Proceedings of the 35th conference on Winter simulation: driving innovation**

Full text available: [pdf\(387.35 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper discusses the problem of fitting mixture models to input data. When an input stream is an amalgam of data from different sources then such mixture models must be used if the true nature of the data is to be properly represented. A key problem is then to identify the different components of such a mixture, and in particular to determine how many components there are. This is known to be a non-regular/non-standard problem in the statistical sense and is technically notoriously difficult ...

Results 1 - 20 of 121

Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [next](#)

The ACM Portal is published by the Association for Computing Machinery. Copyright © 2005 ACM, Inc.

[Terms of Usage](#) [Privacy Policy](#) [Code of Ethics](#) [Contact Us](#)

Useful downloads:  [Adobe Acrobat](#)  [QuickTime](#)  [Windows Media Player](#)  [Real Player](#)

# Kenji Yamanishi

List of publications from the [DBLP Bibliography Server - FAQ](#)

Coauthor Index - Ask others: [ACM DL](#) - [ACM Guide](#) - [CiteSeer](#) - [CSB](#) - [Google](#)

2005		
35	EE	Kenji Yamanishi, Yuko Maruyama: Dynamic syslog mining for network failure monitoring. <i>KDD 2005</i> : 499-508
2004		
34	EE	Satoshi Morinaga, Kenji Yamanishi: Tracking dynamics of topic trends using a finite mixture model. <i>KDD 2004</i> : 811-816
33	EE	Kenji Yamanishi, Jun-ichi Takeuchi, Graham J. Williams, Peter Milne: On-Line Unsupervised Outlier Detection Using Finite Mixtures with Discounting Learning Algorithms. <i>Data Min. Knowl. Discov.</i> 8(3): 275-300 (2004)
2003		
32	EE	Satoshi Morinaga, Kenji Yamanishi, Jun-ichi Takeuchi: Distributed cooperative mining for information consortia. <i>KDD 2003</i> : 619-624
31	EE	Hang Li, Kenji Yamanishi: Topic analysis using a finite mixture model. <i>Inf. Process. Manage.</i> 39(4): 521-541 (2003)
2002		
30	EE	Satoshi Morinaga, Kenji Yamanishi, Kenji Tateishi, Toshikazu Fukushima: Mining product reputations on the Web. <i>KDD 2002</i> : 341-349
29	EE	Kenji Yamanishi, Jun-ichi Takeuchi: A unifying framework for detecting outliers and change points from non-stationary time series data. <i>KDD 2002</i> : 676-681
28	EE	Kenji Yamanishi, Hang Li: Mining Open Answers in Questionnaire Data. <i>IEEE Intelligent Systems</i> 17(5): 58-63 (2002)
27		Hang Li, Kenji Yamanishi: Text classification using ESC-based stochastic decision lists. <i>Inf. Process. Manage.</i> 38(3): 343-361 (2002)
2001		
26	EE	Kenji Yamanishi, Jun-ichi Takeuchi: Discovering outlier filtering rules from unlabeled data: combining a supervised learner with an unsupervised learner. <i>KDD 2001</i> : 389-394
25	EE	Hang Li, Kenji Yamanishi: Mining from open answers in questionnaire data. <i>KDD 2001</i> : 443-449
2000		
24	EE	Kenji Yamanishi, Jun-ichi Takeuchi, Graham J. Williams, Peter Milne: On-line unsupervised outlier detection using finite mixtures with discounting learning algorithms. <i>KDD 2000</i> : 320-324

## 1999

23 EE Kenji Yamanishi: Extended Stochastic Complexity and Minimax Relative Loss Analysis. [ATL 1999](#): 26-38

22 EE Hang Li, Kenji Yamanishi: Text Classification Using ESC-based Stochastic Decision Lists. [CIKM 1999](#): 122-130

21 Kenji Yamanishi: Distributed Cooperative Bayesian Learning Strategies. [Inf. Comput.](#) 150(1): 22-56 (1999)

## 1998

20 EE Kenji Yamanishi: Minimax Relative Loss Analysis for Sequential Prediction Algorithms Using Parametric Hypotheses. [COLT 1998](#): 32-43

19 Kenji Yamanishi: A Decision-Theoretic Extension of Stochastic Complexity and Its Applications to Learning. [IEEE Transactions on Information Theory](#) 44(4): 1424-1439 (1998)

## 1997

18 Hang Li, Kenji Yamanishi: Document Classification Using a Finite Mixture Model. [ACL 1997](#): 39-47

17 EE Kenji Yamanishi: Distributed Cooperative Bayesian Learning Strategies. [COLT 1997](#): 250-262

16 EE Hang Li, Kenji Yamanishi: Document Classification Using a Finite Mixture Model [CoRR cmp-lg/9705005](#): (1997)

15 Kenji Yamanishi: On-Line Maximum Likelihood Prediction with Respect to General Loss Functions. [J. Comput. Syst. Sci.](#) 55(1): 105-118 (1997)

## 1996

14 EE Kenji Yamanishi: A Randomized Approximation of the MDL for Stochastic Models with Hidden Variables. [COLT 1996](#): 99-109

## 1995

13 EE Kenji Yamanishi: Randomized Approximate Aggregating Strategies and Their Applications to Prediction and Discrimination. [COLT 1995](#): 83-90

12 Kenji Yamanishi: On-line maximum likelihood prediction with respect to general loss functions. [EuroCOLT 1995](#): 84-98

11 Hiroshi Mamitsuka, Kenji Yamanishi: alpha-Helix region prediction with stochastic rule learning. [Computer Applications in the Biosciences](#) 11(4): 399-411 (1995)

10 Kenji Yamanishi: A Loss Bound Model for On-Line Stochastic Prediction Algorithms. [Inf. Comput.](#) 119(1): 39-54 (1995)

9 Kenji Yamanishi: Probably Almost Discriminative Learning. [Machine Learning](#) 18(1): 23-50 (1995)

## 1994

8 EE Kenji Yamanishi: The Minimum  $L$ -Complexity Algorithm and its Applications to Learning Non-Parametric Rules. [COLT 1994](#): 173-182

## 1993

7 EE Kenji Yamanishi: On Polynomial-Time Probably almost Discriminative Learnability. [COLT 1993](#): 94-100

## 1992

6 Hiroshi Mamitsuka, Kenji Yamanishi: Protein Secondary Structure Prediction Based on

		Stochastic-Rule Learning. <i>ALT</i> 1992: 240-251
5	EE	Kenji Yamanishi: Probably Almost Discriminative Learning. <i>COLT</i> 1992: 164-171
4		Kenji Yamanishi: A Learning Criterion for Stochastic Rules. <i>Machine Learning</i> 9: 165-203 (1992)
<b>1991</b>		
3	EE	Kenji Yamanishi: A Loss Bound Model for On-Line Stochastic Prediction Strategies. <i>COLT</i> 1991: 290-302
2		Kenji Yamanishi, Akihiko Konagaya: Learning Stochastic Motifs from Genetic Sequences. <i>ML</i> 1991: 467-471
<b>1990</b>		
1	EE	Kenji Yamanishi: A Learning Criterion for Stochastic Rules. <i>COLT</i> 1990: 67-81

## Coauthor Index

1	Toshikazu Fukushima	[30]
2	Akihiko Konagaya	[2]
3	Hang Li	[16] [18] [22] [25] [27] [28] [31]
4	Hiroshi Mamitsuka	[6] [11]
5	Yuko Maruyama	[35]
6	Peter Milne	[24] [33]
7	Satoshi Morinaga	[30] [32] [34]
8	Jun-ichi Takeuchi	[24] [26] [29] [32] [33]
9	Kenji Tateishi	[30]
10	Graham J. Williams	[24] [33]

# Jun-ichi Takeuchi

List of publications from the [DBLP Bibliography Server - FAQ](#)

Coauthor Index - Ask others: [ACM DL](#) - [ACM Guide](#) - [CiteSeer](#) - [CSB](#) - [Google](#)

2005		
13	EE	Jun-ichi Takeuchi, Shun-ichi Amari: /spl alpha/-parallel prior and its properties. <a href="#">IEEE Transactions on Information Theory</a> 51(3): 1011-1023 (2005)
2004		
12	EE	Takayuki Nakata, Jun-ichi Takeuchi: Mining traffic data from probe-car system for travel time prediction. <a href="#">KDD 2004</a> : 817-822
11	EE	Kenji Yamanishi, Jun-ichi Takeuchi, Graham J. Williams, Peter Milne: On-Line Unsupervised Outlier Detection Using Finite Mixtures with Discounting Learning Algorithms. <a href="#">Data Min. Knowl. Discov.</a> 8(3): 275-300 (2004)
2003		
10	EE	Satoshi Morinaga, Kenji Yamanishi, Jun-ichi Takeuchi: Distributed cooperative mining for information consortia. <a href="#">KDD 2003</a> : 619-624
2002		
9	EE	Kenji Yamanishi, Jun-ichi Takeuchi: A unifying framework for detecting outliers and change points from non-stationary time series data. <a href="#">KDD 2002</a> : 676-681
2001		
8	EE	Kenji Yamanishi, Jun-ichi Takeuchi: Discovering outlier filtering rules from unlabeled data: combining a supervised learner with an unsupervised learner. <a href="#">KDD 2001</a> : 389-394
2000		
7	EE	Kenji Yamanishi, Jun-ichi Takeuchi, Graham J. Williams, Peter Milne: On-line unsupervised outlier detection using finite mixtures with discounting learning algorithms. <a href="#">KDD 2000</a> : 320-324
6		Jun-ichi Takeuchi, Naoki Abe, Shun-ichi Amari: The Lob-Pass Problem. <a href="#">J. Comput. Syst. Sci.</a> 61(3): 523-557 (2000)
1998		
5		Atsuyoshi Nakamura, Jun-ichi Takeuchi, Naoki Abe: Efficient Distribution-Free Population Learning of Simple Concepts. <a href="#">Ann. Math. Artif. Intell.</a> 23(1-2): 53-82 (1998)
1994		
4		Atsuyoshi Nakamura, Naoki Abe, Jun-ichi Takeuchi: Efficient Distribution-free Population Learning of Simple Concepts. <a href="#">AII/ALT 1994</a> : 500-515
1993		

3	EE	Naoki Abe, Jun-ichi Takeuchi: The "lob-pass" Problem and an On-line Learning Model of Rational Choice. <i>COLT 1993</i> : 422-428
1992		
2		Jun-ichi Takeuchi: Some Improved Sample Complexity Bounds in the Probabilistic PAC Learning Model. <i>ALT 1992</i> : 208-219
1991		
1	EE	Naoki Abe, Manfred K. Warmuth, Jun-ichi Takeuchi: Polynomial Learnability of Probabilistic Concepts with Respect to the Kullback-Leibler Divergence. <i>COLT 1991</i> : 277-289

## Coauthor Index

1	Naoki Abe	[1] [3] [4] [5] [6]
2	Shun-ichi Amari	[6] [13]
3	Peter Milne	[7] [11]
4	Satoshi Morinaga	[10]
5	Atsuyoshi Nakamura	[4] [5]
6	Takayuki Nakata	[12]
7	Manfred K. Warmuth	[1]
8	Graham J. Williams	[7] [11]
9	Kenji Yamanishi	[7] [8] [9] [10] [11]

# Jun'ichi Takeuchi's Publication List

## Refereed Journal Papers

1. J. Takeuchi & K. Yamanishi:  
"A Unifying Framework for Detecting Outliers and Change Points from Non-Stationary Time Series Data," *IEEE transactions on Knowledge and Data Engineering*, to appear.
2. J. Takeuchi & S. Amari:  
" $\alpha$ -Parallel Prior and Its Properties," *IEEE transactions on Information Theory*, Vol. 51, No. 3, pp. 1011-1023, March 2005.
3. K. Yamanishi, J. Takeuchi, G. Williams, & P. Milne:  
"On-line Unsupervised Oultlier Detection Using Finite Mixtures with Discounting Learning Algorithms," *Data Mining and Knowleged Discovery Journal*, 8 (3): 275-300, May 2004.
4. N. Abe, J. Takeuchi, & M. Warmuth :  
"Polynomial Learnability of Stochastic Rules with respect to the KL-divergence and Quadratic Distance," *IEICE transactions (D)*, Vol.E84-D No.3 pp. 299-316, 2001.
5. J. Takeuchi, N. Abe, & S. Amari :  
"The Lob-Pass problem," *Journal of Computer and System Sciences*, Vol. 61, No. 3, pp. 523-557, 2000.
6. A. Nakamura, J. Takeuchi, & N. Abe :  
"Efficient distribution-free population learning of simple concepts," *Annals of Mathematics and Artificial Intelligence*, 23, pp. 53-82, 1998.
7. J. Takeuchi :  
"Characterization of the Bayes estimator and the MDL estimator for exponential families," *IEEE transactions on Information Theory*, Vol. 43, No. 4, pp. 1165-1174, 1997.
8. J. Takeuchi :  
"Improved sample complexity bounds for parameter estimation," *IEICE transactions (D)*, Vol. E78D, No. 5, pp. 526-531, 1995.

## Refereed Conference Papers

1. J. Takeuchi & T. Kawabata:  
"Exponential Curvature and Jeffreys Mixture Prediction Strategy for Markov Model (in Japanese)," *Proc. of the Seventh Workshop on Information-Based Induction Sciences (IBIS2004)*, 2004.
2. T. Nakata & J. Takeuchi:  
"Learning Travel Time Prediction Function from Probe-Car Data (in Japanese)," *Proc. of the Seventh Workshop on Information-Based Induction Sciences (IBIS2004)*, 2004.
3. T. Nakata & J. Takeuchi:  
"Mining Traffic Data from Probe-Car System for Travel Time Prediction," *Proc. of the*

*tenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, ACM Press (KDD2004), 2004.*

4. S. Morinaga, K. Yamanishi, & J. Takeuchi:  
"Distributed Cooperative Mining for Information Consortia," *Proc. of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, ACM Press (KDD2003)*, 2003.
5. J. Takeuchi & K. Yamanishi :  
"A Unifying Framework for Detecting Outliers and Change Points from Non-Stationary Time Series (in Japanese)," *Proc. of the fifth Workshop on Information-Based Induction Sciences (IBIS2002)*, 2002.
6. K. Yamanishi & J. Takeuchi:  
"A Unifying Framework for Detecting Outliers and Change Points from Non-Stationary Time Series Data", *Proc. of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, ACM Press (KDD2002)*, 2002.
7. J. Takeuchi, T. Kawabata, & A. R. Barron:  
"Properties of Jeffreys mixture for Markov sources," *Proc. of the fourth Workshop on Information-Based Induction Sciences (IBIS2001)*, pp. 327-332, 2001.
8. K. Yamanishi & J. Takeuchi:  
"Discovering Outlier Filtering Rules from Unlabeled Data --Combining a Supervised Learner with an Unsupervised Learner--(in Japanese)," *Proc. the fourth Workshop on Information-Based Induction Sciences (IBIS2001)*, pp. 111-116, 2001.
9. K. Yamanishi & J. Takeuchi:  
"Discovering Outlier Filtering Rules from Unlabeled Data --Combining Supervised Learners with Unsupervised Learners--", *Proc. of the Seventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, ACM Press, (KDD2001)*, 2001.
10. K. Yamanishi & J. Takeuchi:  
"Statistical Outlier Detection Using On-line Discounting Learning Algorithms (in Japanese)," *Proc. the third Workshop on Information-Based Induction Sciences*, 2000.
11. J. Takeuchi :  
"On minimax regret with respect to families of stationary stochastic processes (in Japanese)," *Proc. of the third Workshop on Information Based Induction Sciences*, 2000.
12. K. Yamanishi, J. Takeuchi, G. Williams, & P. Milne:  
"On-line Unsupervised Oultlier Detection Using Finite Mixtures with Discounting Learning Algorithms," *Proc. of the Sixth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, ACM Press (KDD2000)*, pp:320-324, 2000.
13. J. Takeuchi & A. R. Barron :  
"Asymptotically minimax regret by Bayes mixtures," *Proc. of 1998 IEEE International Symposium on Information Theory*, 1998.
14. J. Takeuchi & T. Kawabata :  
"Approximation of Bayes code for Markov sources," *Proc. of 1995 IEEE International Symposium on Information Theory*, p.391, 1995.

15. J. Takeuchi :  
"Characterization of the Bayes estimator and the MDL estimator for exponential families," *Proc. of 1995 IEEE International Symposium on Information Theory* (long presentation), p.228, 1995.
16. A. Nakamura, N. Abe & J. Takeuchi :  
"Efficient distribution-free population learning of simple concepts," *Proc. of the 5th International Workshop on Algorithmic Learning Theory*, pp. 500-515, 1994.
17. N. Abe & J. Takeuchi :  
"The 'Lob-Pass' problem and an on-line learning model of rational choice," *Proc. of the 7th Annual Conference on Computational Learning Theory*, pp. 422-428, 1993.
18. J. Takeuchi :  
"Some improved sample complexity bounds in the probabilistic PAC learning model," *Proc. of the 3rd Workshop on Algorithmic Learning Theory*, pp. 208-219, 1992.
19. N. Abe, J. Takeuchi, & M. Warmuth :  
"Polynomial learnability of probabilistic concepts with respect to the Kullback-Leibler divergence," *Proc. of the 4th annual Workshop on Computational Learning Theory*, pp. 277-289, 1991.

## Articles and other Invited Papers

1. K. Yamanishi, J. Takeuchi, Y. Maruyama:  
"Three Methods for Statistical Anomaly Detection (in Japanese)," *IPSJ Magazine (Joho Shori)*, Vol. 46, No. 1, pp. 34-40, 2005.
2. N. Abe, K. Yamanishi, A. Nakamura, H. Mamitsuka, J. Takeuchi, & H. Li:  
"Distributed and Active Learning," The Foundations of Real-World Intelligence, Oct. 2001.
3. J. Takeuchi & K. Yamanishi:  
"Statistical outlier detection in data mining (in Japanese)," *Bulletin of the Japan Society for Industrial and Applied Mathematics (Oyou Suuri)*, Vol. 10, No. 3, 2001.
4. J. Takeuchi:  
"Asymptotically Minimax Codes by Bayes Procedures (in Japanese)," *Proc. of IEICE Society Conference*, October 1998.
5. J. Takeuchi:  
"Stochastic complexity and Jeffreys mixture prediction strategies (in Japanese)," *Proc. of the first Workshop on Information Based Induction Sciences*, pp. 9-16, 1998.
6. A. R. Barron & J. Takeuchi:  
"Mixture models achieving optimal coding regret," *Proc. of 1998 IEEE Inform. Theory Workshop*, 1998.

## Other Conference Papers (selected)

1. J. Takeuchi & A. R. Barron:

``Robustly minimax codes for universal data compression," *Proc. of the 21st Symposium on Information Theory and its Applications (SITA'98)*, 1998.

2. J. Takeuchi & A. R. Barron:  
``Asymptotically minimax regret for exponential families," *Proc. of the 20th Symposium on Information Theory and its Applications (SITA'97)*, pp. 665-668, 1997. **Best papers award at SITA'97**.

3. J. Takeuchi & K. Kawabata:  
``On data compression algorithms by Bayes coding for Markov sources (in Japanese)," *Proc. of the 17th Symposium on Information Theory and its Applications (SITA'94)*, pp.513-516, 1994.

June 13th, 2005

---

Go to [the top of Jun'ichi Takeuchi's page](#)

Go to [the top of NEC R&D on Data & Text Mining](#)

# Kenji Yamanishi

*Last Updated: Jan. 2005*

Japanese Version

Research Fellow

Data Mining Research Group,  
Ineternet Systems Laboratories, NEC Corporation.  
1753, Shimonumabe, Nakahara-ku,  
Kawasaki, Kanagawa, 211-8666, Japan.  
e-mail: k-yamanishi att cw.jp.nec.com

## ***Education***

**1992 Ph.D.** Mathematical Engineering, University of Tokyo, Japan.

**Advisor:** Prof. Shun-ichi Amari.

**Dissertation:** *A Statistical Approach to Computational Learning Theory.*

**1987 M.S.** Mathematical Engineering, University of Tokyo, Japan.

**Advisor:** Prof. Shun-ichi Amari.

**Thesis:** *A Study on Algebraic-Geometric Codes.* (in Japanese).

**1984 B.A.** Mathematical Engineering, University of Tokyo, Japan.

**Advisor:** Prof. Shun-ichi Amari.

**Thesis:** *A Geometrical Approach to Theories of Time Series and Systems.* (in Japanese).

## ***Employment History***

**July 2000–June 2002**

Research Fellow, NEC Corporation, Japan.

**July 2000–June 2002**

Principal Researcher, NEC Corporation, Japan.

**Sept.1995–June 2000**

Assistant Manager, NEC Corporation, Japan.

**Aug.1992–Aug.1995.**

Visiting Scientist, NEC Research Institute, Inc., NJ, U.S.A.

**July 1992.**

Assistant Manager, NEC Corporation, Japan.

**Apr.1987–June 1992.**

Researcher, NEC Corporation, Japan.

## ***Research Interests***

**Theory:**Computational Learning Theory, Information Theory, Statistical Inference,  
Computational Statistics,

**Applications:**Machine Learning, Data Mining (Anomaly Detection, Rule Induction),  
Text Mining (Text Classification, Topic Analysis).

## ***Awards***

**2005.** Advanced Technology Award -Fuji Sankei Business Eye Award

**2004.** Best Invention Award from NEC Corporation (Joint Work)

**2003.** Contribution Award from NEC Corporation.

**2002.** Contribution Award from NEC Corporation.

**1999.** Contribution Award from NEC Corporation.

**1992.** Contribution Award from NEC Corporation.

**1991.** Uenohara Award from NEC Corporation.

**1991.** Contribution Award from NEC Corporation.

**1990.** Best Paper Award from the Institute of Electronics, Information and  
Communication Engineers, Japan.

**Paper:**On New Asymptotic Performance Evaluation of Binary Modular Codes.

## ***Memberships***

IEEE Information Theory Society, IEICE(Institute of Electronics, Information,  
Communication, and Engineers), JSAI (Japanese Society of Artificial Intelligence),  
SITA(Society of Information Theory and Its Applications)

## Publications

### Refereed Journal Papers

1. K.Yamanishi: ``On Derivation of Good Codes Based on Elliptic Codes and Hyperelliptic Codes," (in Japanese)  
*IEICE Transactions, A*, vol.J71-A, no.10, p.1936-1946, Oct. 1988.
2. K.Yamanishi: ``On New Asymptotic Performance Evaluation of Binary Modular Codes,"(in Japanese)  
*IEICE Transactions, A*, vol. J71-A, no.12, p.2171-2181, Dec. 1988. (Best Paper Award from IEICIE)
3. K.Yamanishi: ``On Construction and Performance Evaluation of Fermat Codes," (in Japanese)  
*IEICE Transactions, A*, vol. J72-A, no.3, p.597-607, Mar. 1989.
4. K.Yamanishi: ``A Learning Criterion for Stochastic Rules,"  
*Machine Learning*, vol.9, pp.165-203, 1992.
5. K.Yamanishi: ``Learning Non-parametric Densities in Terms of Finite-Dimensional Parametric Hypotheses,"  
*IEICE Transactions, Inf.&Syst.*, vol.E75-D, no.4, July 1992.
6. K.Yamanishi: ``Probably Almost Discriminative Learning,"  
*Machine Learning*, vol.18, pp.23-50, 1995.
7. K.Yamanishi: ``A Loss Bound Model for On-line Stochastic Prediction Algorithms,"  
*Information and Computation*, vol.119, 1, pp.39-54, 1995.
8. H.Mamitsuka and K.Yamanishi: ``alpha-Helix Region Prediction with Stochastic Rule learning,"  
*CABIOS*, vol.11, no.4, p.399-411, 1995.
9. K.Yamanishi: ``On-line Maximum Likelihood Prediction with respect to General Loss Functions,"

*Journal on Computer and System Sciences*, 55, p.105-118, 1997.

10. K.Yamanishi: ``A Decision-theoretic Extension of Stochastic Complexity and Its Applications to Learning,"  
*IEEE Transactions on Information Theory*, vol.44, 4, p.1424-1439, 1998.
11. K.Yamanishi: ``Distributed Cooperative Bayesian Learning Strategies,"  
*Information and Computation*, vol.150, p.22-56, 1998.
12. H.Li and K.Yamanishi: ``Text Classification Using ESC-based Decision Lists,"  
*Information Processing and Management*, .Vol. 38/3, pp 343-361, March 2002.
13. H.Li and K.Yamanishi: ``Topic Analysis Using a Finite Mixture Model,"  
*Information Processing and Management*,. Vol.39/4, pp 521-541, 2003.
14. K.Yamanishi: and H.Li: ``Mining Open Answers in Questionare Data,"  
*IEEE Intelligent Systems*. pp:58-63, September/October, 2002.
15. K.Yamanishi, J.Takeuchi, G.Williamas, and P.Milne: ``On-line Unsupervised Oultlier Detection Using Finite Mixtures with Discounting Learning Algorithms,"  
*Data Mining and Knowledge Discovery Journal*, pp:275-300, May 2004, Volume 8, Issue 3.

### ***Invited Journal Papers, Article***

1. K.Yamanishi and T.Han: ``An Introduction to MDL: Information-theoretic View," (in Japanese)  
*Journal of Japanese Society for Artificial Intelligence*, p.427-434, vol 7(3), May 1992.
2. K.Yamanishi: ``An Introduction to MDL: Computational Learning-theoretic View," (in Japanese)  
*Journal of Japanese Society for Artificial Intelligence*, p.435-442, vol 7(3), May 1992.
3. K.Yamanishi: ``Stochastic Complexity and Learning Theory," (in Japanese)  
*Operations Research*, p.379-386, vol.41 (7), 1996.
4. K.Yamanishi: ``Data Compression and Learning," (in Japanese)

*Journal of Japanese Society for Artificial Intelligence*, p.204-215, vol.12 (2), 1997.

5. K.Yamanishi: ``Minimum Description Length Principle," (in Japanese)  
*Journal of Japan Society for Fuzzy Theory and Systems*, vol.10, No.1, p.43-50, 1998.
6. K.Yamanishi: ``Extended Stochastic Complexity and Its Applications to Learning," (in Japanese)  
*Applied Mathematics*, vol.8, No.3, p.14-29, 1998.
7. K.Yamanishi: ``Information Theory, Statistics, and Machine Learning," (in Japanese)  
*Journal of the Society of Instrument and Control Engineers*, vol.38, p.411-412, 1999.
8. K.Yamanishi: ``Statistical Model Selection and Machine Learning," (in Japanese)  
*Journal of the Society of Instrument and Control Engineers*, vol.38, p.420-426, 1999.
9. J.Takeuchi and K.Yamanishi: ``Statistical Outlier Detection in Data Mining," (in Japanese)  
*Applied Mathematics*, 2001
10. K.Yamanishi: ``Current Status and Survey of Information-Based Induction Sciences," (in Japanese)  
*Journal of Information Processing*, vol.42, No.1, pp:9--15, 2001.
11. K.Yamanishi: ``Data and Text Mining," (in Japanese)  
*Journal of Computational Engineering*, Oct. 2001.
12. N.Abe, K.Yamanishi,A.Nakamura, H.Mamitsuka, J.Takeuchi, and H.Li : ``Distributed and Active Learning,"  
*The Foundations of Real-World Intelligence*, Oct. 2001.
13. K.Yamanishi: ``Data and Text Mining," (in Japanese)  
*in Iwanami: Statistical Science Frontier Series*. Mar. 2003.
14. S.Morinaga and K.Yamanishi: ``Text Mining and Its Applications to Free Survey Data Analysis" (in Japanese)  
*Journal of the Society of Instrument and Control Engineers*. Vol.41, No.5, pp:354-357, 2002.

15. K.Yamanishi: ``New Trend of Data and Text Mining-Outlier Detection and Reputation Mining' (in Japanese)  
*Applied Mathematics*. vol.12, No.4,p.7-22,2002.
16. K.Yamanishi : ``Extended Stochastic Complexity and Its Applications to Learning" to appear in *Advances in Minimum Description Length: Theory and Applications*, The MIT Press
17. K.Yamanishi, J.Takeuchi, Y.Matsunaga: "Security Mining"  
*NEC Technical Journal*, Special Issue on Security, vol.56, No.12, pp:41-45, NEC Corporation, 2003.
18. T.Egawa, M.Kobayashi, K.Yamanishi, A.Arutaki, J.Namiki: "Dynamic Collaboration from Scientists' Eyes,"  
*Journal of Advanced Technology*, pp:17-26, vol.1, No.1, 2004.
19. .K.Yamanishi, J.Takeuchi, Y.Maruyama: "Three Types of Statistical Anomaly Detection, "  
*Information Processing*, vol.46, No.1, pp:34-40, 2005
20. K.Yamanishi, J.Takeuchi, Y.Maruyama: "Data Mining for Security, "  
*Journal of Advanced Technology*, Vol.2, No.1, pp:63-69, 2005.
21. K.Yamanishi and S.Morinaga: "Data Mining for Knowledge Organization,"  
*Journal of Advanced Technology*, Vol.2, No. 2 , pp:129-136, 2005.

### ***Refereed Conference Papers***

- 1.K.Yamanishi: ``On New Asymptotic Performance Evaluation of Binary Modular Codes," presented at *1988 IEEE International Symposium on Information Theory (ISIT88)*, Kobe Japan, June 1988.
2. K.Yamanishi: ``Inferring Optimal Decision Lists from Stochastic Data Using the Minimum Description Length Criterion," presented at *1990 IEEE International Symposium on Information Theory (ISIT90)*, San

Diego, CA, Jan. 1990.

3. K.Yamanishi: ``A Learning Criterion for Stochastic Rules,"  
*Proceedings of the Third Annual Workshop on Computational Learning Theory (COLT90)*, pp.67-81, Morgan Kaufmann, 1990.
4. K.Yamanishi and A.Konagaya: ``Learning Stochastic Motifs from Genetic Sequences,"  
*Proceedings of the Eighth International Workshop on Machine Learning(ML91)*, pp.467-471, Morgan Kaufmann, 1991.
5. K.Yamanishi: ``A Loss Bound Model for On-Line Stochastic Prediction Strategies,"  
*Proceedings of the Fourth Annual Workshop on Computational Learning Theory (COLT91)*, pp.290-302, Morgan Kaufmann, 1991.
6. A.Konagaya and K.Yamanishi: ``Stochastic Decision Predicates: A New Scheme to Represent Motifs,"  
presented at *AAAI Workshop on AI and Molecular Biology*, 1991.
7. K.Yamanishi: ``Learning Non-parametric Densities by Finite Dimensional Parametric Hypotheses,"  
*Proceedings of the Second Annual Workshop on Algorithmic Learning Theory(ALT92)*, pp.175-186, JSAI Press, 1992.
8. K.Yamanishi: ``Probably Almost Discriminative Learning,"  
*Proceedings of the Fifth Annual ACM Workshop on Computational Learning Theory (COLT92)*, pp.164-171, ACM Press, 1992.
9. H.Mamitsuka and K.Yamanishi: ``Protein Secondary Structure Prediction Based on Stochastic-Rule Learning,"  
*Proceedings of the Third Annual Workshop on Algorithmic Learning Theory(ALT92)*, pp.240-251, 1993.
10. H.Mamitsuka and K.Yamanishi: ``Protein \$alpha\$-Helix Region Prediction Based on Stochastic-Rule Learning,"  
*Proceedings of the Twenty-Six Annual Hawaii International Conference on System Sciences(ICSS93)*, p.659-668, IEEE Computer Society Press, 1993.

11. K.Yamanishi: ``On Polynomial-time Probably Almost Discriminative Learnability,"  
*Proceedings of the Sixth Annual ACM Conference on Computational Learning Theory (COLT93)*, pp.94-100, ACM Press, 1993.
12. K.Yamanishi: ``Learning Non-parametric Smooth Rules by Stochastic Rules with Finite Partitioning,"  
*Computational Learning Theory: EuroCOLT'93*, pp.217-228, Oxford, 1994.
13. K.Yamanishi: ``On-Line Prediction Based on the Extended Stochastic Complexity," presented at *Workshop on Descriptive Complexity*, organized by E.Pednault, Newbrunswick, NJ, 1994.
14. K.Yamanishi: ``The Minimum L-complexity Algorithm and Its Applications to Learning Non-parametric Rules,"  
*Proceedings of the Seventh Annual ACM Workshop on Computational Learning Theory (COLT94)*, p.173-182, ACM Press, 1994.
15. K.Yamanishi: ``On-Line Maximum Likelihood Prediction with respect to General Loss Functions,"  
*Lecture Notes in Artificial Intelligence 904, Computational Learning Theory: Second European Conference, EuroCOLT'95*, pp.84-98, Springer, 1995.
16. K.Yamanishi: ``Randomized Approximate Aggregating Strategies and Their Applications to Prediction and Discrimination,"  
*Proceedings of the Eighth Annual Conference on Computational Learning Theory (COLT95)*, pp.83-90, 1995.
17. K.Yamanishi: "A Randomized Approximation of the MDL for Stochastic Models with Hidden Variables,"  
*Proceedings of the Eighth Annual Conference on Computational Learning Theory (COLT96)*, pp.99-109, ACM Press, 1996.
18. K.Yamanishi: "Distributed Cooperative Bayesian Learning Strategies,"  
*Proceedings of the Tenth Annual Conference on Computational Learning Theory (COLT97)*, pp.250-262, ACM Press, 1997.
19. H.Li and K.Yamanishi: "Document Classification Using A Finite Mixture Model,"

*Proceedings of the 35th Annual Meeting of the Association for Computational Linguistics (ACL97)*, p.39-47, Morgan Kaufmann, 1997.

20. K.Yamanishi: "Minimax Relative Sequence Analysis for Sequential Prediction Algorithms Using Parametric Hypotheses,"  
*Proceedings of the 11th Annual Conference on Computational Learning Theory (COLT98)*, pp.32-43, 1998.
21. H.Li and K.Yamanishi: "Text Classification Using ESC-Based Decision Lists,"  
*Proceedings of International Conference on Information & Knowledge Management (CIKM99)*, pp.122-130, 1999.
22. K.Yamanishi: "Extended Stochastic Complexity in Individual Sequence Analysis,"  
*Proceedings of the 1999 Workshop on Information-Based Induction Sciences(IBIS99)*, pp.163-168, 1999.
23. H.Li and K.Yamanishi: "Text Classification Using ESC-Based Decision Lists,"(in Japanese)  
*Proceedings of the 1999 Workshop on Information-Based Induction Sciences(IBIS99)*, pp.239-244, 1999.
24. K.Yamanishi, J.Takeuchi, G.Williams, and P.Milne: "On-line Unsupervised Outlier Detection Using Finite Mixtures with Discounting Learning Algorithms,"  
in *Proceedings of the Sixth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2000)*, ACM Press, pp:320--324 2000.
25. K.Yamanishi and J.Takeuchi: "Statistical Outlier Detection Using On-line Discounting Learning Algorithms,"(in Japanese)  
*Proceedings of the 2000 Workshop on Information-Based Induction Sciences(IBIS2000)*, 2000.
26. H.Li and K.Yamanishi: "Statistical and Lexical Topic Analysis Using a Finite Mixture Model,"(in Japanese)  
*Proceedings of the 2000 Workshop on Information-Based Induction Sciences(IBIS2000)*, 2000.
27. H.Li and K.Yamanishi: "Statistical and Lexical Topic Analysis Using a Finite Mixture

Model,"

*Proceedings of ACL Workshop on Very Large Corpora*, 2000.

28. K.Yamanishi and J.Takeuchi: "Discovering Outlier Filetering Rules From Unlabeled Data--Combininig Supervised Learners with Unsupervised Learneres-,"  
*Proceedings of the Seventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2001)*, ACM Press, pp:389-394, 2001.
29. H.Li and K.Yamanishi: "Mining from Open Answers in Questionare Data ,"  
*Proceedings of the Seventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2001)*, ACM Press, pp:443-449, 2001.
30. K.Yamanishi and J.Takeuchi: "Discovering Outlier Filetering Rules From Unlabeled Data," (in Japanese)  
*Proceedings of the 2001 Workshop on Information-Based Induction Sciences (IBIS2001)*, pp:111-116, 2001.
31. H.Li and K.Yamanishi: " A Statistical Approach to Analgzing Open Answers in Questionare Data ," (in Japanese)  
*Proceedings of the 2001 Workshop on Information-Based Induction Sciences (IBIS2001)*, pp:129-134, 2001.
32. K.Yamanishi and J.Takeuchi: "A Unifying Approach to Detecting Outliers and Change-Points from Nonstationary Data,"  
*Proceedings of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2002)*, ACM Press, 2002.
33. S.Morinaga, K.Yamanishi, K.Tateishi, and T.Fukushima: "Mining Product Reputations on the Web,"  
*Proceedings of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2002)*, ACM Press, 2002.
34. J.Takeuchi and K.Yamanishi: "A Unifying Approach to Detecting Outliers and Change Ponts Using Discounting Learning Algorithms," (in Japanese)  
*Proceedings of the 2002 Workshop on Information-Based Induction Sciences (IBIS2002)*, 2002.

35. S.Morinaga, K.Yamanishi, J.Takeuchi: "Distributed Cooperative Mining from Different Information Sources,"(in Japanese)  
*Proceedings of the 2002 Workshop on Information-Based Induction Sciences (IBIS2002),* 2002.
36. S.Morinaga, K.Yamanishi, J.Takeuchi: "Distributed Cooperative Mining for Information Consortia,"  
*Proceedings of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2003),* ACM Press, 2003.
37. Y.Matsunaga and K.Yamanishi: "An Information-theoretic Approach to Detecting Anomalous Behaviors," (in Japanese)  
*Proceedings of the Second Forum on Information Technologies (FIT2003) ,* 2003.
38. Y.Matsunaga and K.Yamanishi: "Dynamic Model Selection and Its Applications to Anomalous Behavior Detection,"(in Japanese)  
*Proceedings of the 2003 Workshop on Information-Based Induction Sciences (IBIS2003),* 2003.
39. S.Morinaga and K.Yamanishi: "Tracking Dynamics of Topic Trends Using a Finite Mixture Model,"(in Japanese)  
*Proceedings of the Tenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD2004),* ACM Press, 2004.
40. Y.Maruyama and K.Yamanishi: "Dynamic Model Selection with Its Applications to Computer Security,"  
*Proceedings of 2004 IEEE International Workshop on Information Theory, 2004.*
41. Y.Maruyama and K.Yamanishi: "Dynamic Model Selection with Its Applications to Computer Security," ( in Japanese )  
*Proceedings of the 2004 Workshop on Information-Based Induction Sciences (IBIS2004),* pp:15-22, 2003.
42. S.Morinaga and K.Yamanishi: "Mining Dynamics of Topic Trends Using a Finite Mixture Model,"(in Japanese)  
*Proceedings of the 2004 Workshop on Information-Based Induction Sciences (IBIS2004),* pp:78-85, 2004.

43. K.Yamanishi and Y.Maruyama: "Dynamic Model Selection for Network Failure Monitoring," to appear in  
*Proceedings of the Eleventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*  
(KDD2005), ACM Press, 2005.

### ***Invited Conference Papers***

1. K.Yamanishi: ``On New Asymptotic Performance Evaluation of Binary Modular Codes,"  
*Proceedings of Workshop on Coding Theory*, Osaka Japan, June 1988.
2. K.Yamanishi: ``Computational Learning Theory and the MDL Principle," (in Japanese)  
*Proceedings of Information Theory and Its Applications Workshop*, p.55-58, 1991.
3. K.Yamanishi: ``Why does the MDL give an effective learning strategy?" (in Japanese)  
*Proceedings of the 5th Annual Conference for JSAI*, p.77-80, June 1991.
4. K.Yamanishi: ``A Statistical Approach to Computational Learning Theory,"  
*Proceedings of the Third NEC Research Symposium*, pp.238-276, SIAM, 1992.
5. K.Yamanishi: ``On Complexity of MDL Learning and Discrimination,"  
*Proceedings of 1993 IEEE Information Theory Workshop*, p.30-31, 1993.
6. K.Yamanishi: ``Generalized Stochastic Complexity and Its Applications to Learning,"  
*Proceedings of the 1994 Conference on Information Science and Systems*, vol.2, pp.763-768, 1994.
7. K.Yamanishi: ``A Decision-theoretic Extension of Stochastic Complexity and Its Applications to Learning,"(in Japanese)  
*Proceedings of the 1998 Workshop on Information-Based Induction Sciences*, pp.33-41, 1998.
8. K.Yamanishi: ``From MDL criterion to Extended Stochastic Complexity," (in Japanese)

*Proceedings of IEICE (Institute of Electronics, Information, Communication, and Engineers), 1998.*

9. K.Yamanishi: ``Extended Stochastic Complexity and Minimax Relative Loss Analysis,'' *Algorithmic Learning Theory: The Tenth International Conference, ALT'99, Proceedings*, pp.26--38, 1999.
10. K.Yamanishi: ``Information-Based Induction Sciences--Trends and Related Topics,'' (in Japanese)  
*Proceedings of Symposium of the Institute on System, Control, and Information Engineers*, pp:17-24, May 2000.
- 11.K.Yamanishi and J.Takeuchi: ``Data Mining and Business HPC," (in Japanese)  
*Proceedings of NEC/HPC Workshop*, Tokyo Japan, Dec. 2000.
12. K.Yamanishi: ``Data and Text Mining Based on Information-Based Induction Sciences," (in Japanese)  
*Proceedings of Workshop on AI Fundamentals*, Hokuriku, Japan, Mar. 2001.
13. K.Yamanishi: ``Text Mining Using Stochastic Modeling of Text Data," (in Japanese)  
*Proceedings of Workshop on AI Symposium*, Tokyo, Japan, July 2001.
14. K.Yamanishi: ``Web Mining and Information-Based Induction Sciences,'' (in Japanese)  
*Proceedings of Information Science Symposium*, Japan, January 2002.
15. K.Yamanishi and J.Takeuchi: "Anomaly Detection by Data Mining and Its Applications to Network Intrusion Detection," (in Japanese)  
*Proceedings of IEICE Information Network Research Group*. Japan, June, 2002.
- 16 .K.Yamanishi: "Web Mining and Information-Based Induction Sciences-Reputation Mining and Log Mining, " (in Japanese)  
*Proceedings of Information-Based Induction Sciences(IBIS2002)*, Japan, September, 2002.
- 17 .K.Yamanishi: "Detecting Anomalies and Change-points for Cyber Threat Analysis,"  
*Proceedings of IEEE Workshop on Data Mining for Cyber Threat Analysis*, Japan, December, 2002.

18 .K.Yamanishi: "Data Mining Realizing Security/Web Intelligence, " (in Japanese)  
*Proceedings of AI Symposium, JSAI, pp:99-104, Japan, April, 2002.*

19. K.Yamanishi: "Data Mining and Security, "(in Japanese)  
*Proceedings of the 17th Annual Conference on JSAI, Japan, June, 2002.*

20. K.Yamanishi: "Text Mining, " (in Japanese)  
*Proceedings of the Second Forum on Information Technologies (FIT2003), 2003.*

21.K.Yamanishi: "Text Mining and NLP Business, "(in Japanese)  
*Proceedings of 2003 JEITA Symposium on Natural Language Processing-NLP Business, 2003.*

22.K.Yamanishi: "Data Mining based Security Technologies," (in Japanese)  
*Proceedings of Artificial Intelligence Seminar-Computer Security and AI-, 2005.*

### ***Other Invited Talks***

1. ``Algebraic-Geometric Codes,"  
presented for Seminar at Yokohama National University (hosted by Prof.H.Imai), Kanagawa Japan, Feb. 1987.
2. ``Algebraic-Geometric Codes,"  
presented at *Workshop on Combinatorial Theory and Its Applications*, Tsukuba Japan, July 1987.
3. ``Algebraic-Geometric Codes,"  
presented for Seminar at Electro-Communication University (hosted by Prof.H.Mizuno), Tokyo Japan, Nov. 1987.
4. ``A Theory of Learning Stochastic Rules,"  
presented for Seminar at University of Tokyo (hosted by Prof.S.Amari), Tokyo Japan, July 1991.
5. ``Learning Based on the MDL Principle,"  
presented for Seminar at IBM Almaden Research Center (hosted by J.Rissanen), CA,

U.S.A., July 1991.

6. ``Learning Theory and the MDL Principle,"  
presented at *Workshop on Pattern Recognition*, University of Tokyo, Tokyo Japan,  
Feb. 1992.
7. ``Universal Discrimination Using the MDL Principle,"  
presented for Seminar at Electro-Communication University (hosted by Prof.H.Morita),  
Tokyo Japan, July 1992.
8. ``The Minimum L-Complexity Algorithm and Its Applications to Learning,"  
presented for Seminar at AT&T Bell Laboratories, Murray Hills (hosted by Y.Freund),  
NJ U.S.A., Feb. 1994.
9. "A Decision-theoretic Extension of Stochastic Complexity and Its Applications to  
Learning,"  
presented for Seminar at University of Tokyo (hosted by Prof.K.Hayami), Tokyo  
Japan, Feb. 1996.
10. "A Decision-theoretic Extension of Stochastic Complexity and Its Applications to  
Learning,"  
presented for Seminar at University of Tokyo (hosted by Prof.Tsujii), Tokyo Japan,  
October 1997.
11. "Informatin-Based Induction Sciences,"  
presented at *Workshop on Mathematical Engineering Methods for Statistical  
Information Processing*, The Institute of Statist. Math., January 1998.
12. "Extended Stochastic Complexity and Learning Theory,"  
presented for Seminar at Waseda University (hosted by Prof.Matsushima), Tokyo  
Japan, May 1998.
13. "Extended Stochastic Complexity and Learning Theory,"  
presented for Seminar at Electro-Communication University (hosted by Prof. Te-sun  
Han), Tokyo Japan, December 1998.
14. "Extended Stochastic Complexity and Machine Learning,"

presented for Seminar at University of Tokyo (hosted by Prof.Yamamoto), Tokyo Japan,  
May 1999.

15. "Information Mining--Fraud Detection and Text Mining,"  
presented at *Statistical Sciences and Data Mining*, The Institute of Statist. Math.,  
Tokyo Japan, October 1999.
16. "On-line Unsupervised Outlier Detection Using Finite Mixture Models,"  
presented at *Toward a New Unification of Statistical Sciences, Neural Networks, and  
Data Mining*, The Institute of Statist. Math., Tokyo Japan, Nov. 2000.
17. "Latest Data Mining Technologies with Their Applications to CRM,"  
presented at Datawarehouse and CRM Expo. Tutorial Seminar, Tokyo Japan, June  
2001.
18. "Web Mining,"  
presented at JEITA Research Seminar, June 2003.
19. "Data Mining-Toward Security Intelligence and Knowledge Organization,"  
presented at Tsukuba University, July 2004.

*Note:* The list here does not include any papers published without being reviewed, except invited papers. Please contact me directly if you wish to look at them.

## ***Professional Activities***

### ***Lecturer***

1. A Special Lecture at Graduate School at University of Tokyo from Nov.2000 to Feb.2001.

### ***Committees***

1. Member of COLT (Computational Learning Theory) Working Group since 1994.

2. Program committee member on COLT'93 (ACM Conference on Computational Learning Theory), 1993.
3. Program committee member on ML'94 (International Conference on Machine Learning), 1994.
4. Program committee member on EuroCOLT'95 (European Conference on Computational Learning Theory), 1995.
5. Program committee member on ML'95 (International Conference on Machine Learning), 1995.
6. Program committee member on WCNN'95 (World Conference on Neural Networks), 1995.
7. Program committee member on ALT'96 (Workshop on Algorithmic Learning Theory), 1996.
8. Advisory committee member on COLT'97 (International Conference on Computational Learning Theory), 1997.
9. Chair of 1998 Workshop on IBIS'98 (Information-Based Induction Sciences), 1998.
10. Committee member on Information Theory Society of IEICE (Institute of Electronics, Information, Communication, and Engineers).
11. Program committee member on COLT'99 (ACM Conference on Computational Learning Theory), 1999.
12. Editor of Special Issue of Information Theory, Statistical Methods, and Machine Learning in SICE (Society of Instrument and Control Engineers), 1999.
13. Program chair on IBIS'99 (Information-Based Induction Sciences), 1999.
14. Editor of Special Issue of Information-Based Induction Sciences in IEICE (Institute of Electronics, Information, Communication, and Engineers), 1999.

15. Program committee member on IBIS 2000 (Information-Based Induction Sciences), 2000.
16. Program committee member on Special Issue of Information-Based Induction Sciences in Journal of Japanese Society of Artificial Intelligence, 2000
17. Chair of Time-Limited Research Committee on Information-Based Induction Sciences, IEICE (Institute of Electronics, Information, Communication, and Engineers), Information Systems Society, 2001--2003.
18. Program committee member on IBIS 2001 (Information-Based Induction Sciences), 2001.
19. Member on Editorial Board on Special Issue of Information-Based Induction Sciences in IEICE (Institute of Electronics, Information, Communication, and Engineers), 2001.
20. Member on Editorial Board, Fundamentals in IEICE (Institute of Electronics, Information, Communication, and Engineers), 2001-
21. Member on Society Editorial Board, Information Systems in IEICE (Institute of Electronics, Information, Communication, and Engineers), 2001-.
22. Member on Editorial Board on Program on Special Issue of Information-Based Induction Sciences in IEICE (Institute of Electronics, Information, Communication, and Engineers), 2002.
23. Program committee member on IBIS 2002 (Information-Based Induction Sciences), 2002.
24. Program committee member on DS' 02 (Conference on Discovery Science), 2002.
25. FIT(Forum on Information Technologies) Program committee member on FIT 2002.
26. Program committee member on OTC-03 (3rd Workshop on Operational Text Classification), 2003

27. Member on Editorial Board on Program on Special Issue of Information-Based Induction Sciences in IEICE (Institute of Electronics, Information, Communication, and Engineers), 2004.
28. Co-Chair on IJCNLP2004 (First International Conference on Natural Language Processing), 2004.
29. Program committee member on KDD2004 (ACM Conference on Knowledge Discovery and Data Mining).
30. Chair on 2004 IBIS'04 (Information-Based Induction Sciences) , 2004.
31. Program committee member on IJCAI2005.
32. Program committee member on ALT2005
33. Program committee member on KDD2005
34. Steering Committee member on Society on Information Theory and Its Applications, JAPAN.

### ***Referee for Journal Submission***

- IEEE Transactions on Information Theory.
- IEEE Transactions on Neural Networks.
- Journal of Computer and System Sciences.
- Information and Computation.
- SIAM Journal on Computing.
- Machine Learning.

- Theoretical Computer Science.
- Information Processing Letters.
- IEICE (The Institute of Electronics, Information and Communication Engineers) Transactions.
- Journal of Japan Society for Fuzzy Theory and Systems
- Journal of Japan Society for Artificial Intelligence

### ***Tenure/Dissertation Committees***

- Vijay Ragavan--Promoted to Associate Professor with tenure in Vanderbilt University, 1995.
- Peter Grunwald--Received Ph.D with the paper "The Minimum Description Length Principle and Reasoning Under Uncertainty" from Universiteit van Amsterdam, 1999.